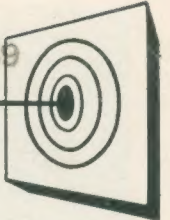


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1958 NATIONAL BENCH REST CHAMPION
ROBERT W. SMITH FROM DALLAS, TEXAS



a magazine for Shooters by Shooters

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BENCH REST SHOOTING

It seems that some people, perhaps far too many, have formed the opinion that bench rest shooting is a minor and easy "shooting game" which well-to-do old men play with very expensive small caliber high velocity rifles. That "opinion" is not a fact and it seems past time that information is supplied to correct it.

It is true that in point of numbers of competitors, competitive bench rest shooting is a minor "shooting game." It is true that in competitive bench rest shooting the great majority of competitors do shoot .22 caliber center-fire rifles, simply because that caliber has proven most successful for the particular purpose, but not because they have to use that caliber.

It is not true that bench rest shooting is an "easy" shooting game. The bench rest shooter's position for shooting, sitting at a bench, is a comfortable one, but no shooting game requires more care, concentration and observation to insure success than does competitive rest shooting.

Competitive bench rest shooting is not just an "old men's" shooting game—the range of age and sex in bench rest matches is as great as in any other shooting game. Older shooters do enjoy shooting from rest because of the more comfortable shooting position and some physically handicapped people may enjoy shooting from rest that might not be able to participate in other shooting games, but it is chiefly the challenge of required accuracy that attracts the competitors to this shooting game.

It is not essential that competitive bench rest shooters be more well-to-do financially than for most other competitive shooting games. A plain but basically sound and accurate bench rest rifle need cost little if any more than the rifles having the accuracy necessary for successful results in smallbore or high power rifle competition, and certainly no more than the rifles necessary for successful results in the ISU international free rifle style of shooting. That is also true of other equipment and accessories which are essential to the various styles of shooting games.

Finally, bench rest shooting is not just another "shooting game." Only a small minority of those who shoot a rifle from rest compete in bench rest rifle matches. The great majority of those who shoot rifles from rest are interested, inquisitive riflemen who use the bench rest technique as a practical, quite readily available means for testing their rifles

and ammunition for accuracy. Even a number of those who do compete in bench rest rifle matches consider the competition more a proving ground for their experiments toward improving some item contributing to rifle accuracy, than as just a "shooting game."

The one point that should be clearly understood by all, and accepted as a fact, is that shooting a rifle from rests of any type does not, of itself, make ONE SINGLE BIT OF DIFFERENCE in the accuracy of the rifle.

Present day bench rest shooting merely provides a practical, relatively inexpensive, means of keeping a rifle aligned on a target with a minimum of movement until the cartridge is fired in order to determine the true accuracy of the rifle-ammo-sighting combination being tested.

Dependable results from bench rest shooting requires uniformity in all the details of handling the rifle while making a group. Even though the rifle be held on aim without motion, if the shooter goes by causing a movement of the rifle when releasing the firing pin or striker to discharge the cartridge (flinching), the result is proportionately as bad or worse than when shooting from any other position. (This writer knows this to be a fact from personal experience—he started his shooting without training and early acquired the flinching habit, evidently to plague him the rest of his shooting life.)

The type of rests used to support the rifle does not seem to be especially important, provided they permit the particular shooter to keep the rifle motionless, or with a minimum of motion, on aim until it is discharged, and allow for uniform action of the rifle from shot to shot in a string.

No one need expect to put just any rifle on rests, shoot in it any ammunition which may be at hand, perhaps with mediocre sighting equipment, handle the rifle in a haphazard manner, and average any better accuracy than might be expected from the same rifle, ammo and sights, fired carelessly in any other manner.

On the other hand, any experienced rifleman beginning rest shooting on his own (as many must do), using rests that permit him to keep the rifle motionless on aim while he releases the firing mechanism, and allows the rifle to recoil uniformly from shot to shot, and is sure of both points, who does not get average groups of size which may be reasonably expected from the type of rifle in the caliber he is using, may be reasonably sure that either rifle, ammunition, or sighting equipment is not as it should be. If he then starts searching for the trouble, testing from rests as he makes changes, he is on the way to becoming a bench rest shooter, and, quite frequently, a confirmed do-it-yourself rifle tinkerer and experimenter as well.

No one can aim a rifle any better than he can see. An experienced rifleman, with reasonably good eyesight, should be able to get good average accuracy from a good rifle and ammo when shooting from rest with good iron sights. He should expect to get somewhat better average accuracy from the same good rifle and ammo by using a hunting scope sight in proper adjustment, because he can see to aim more accurately. In testing a target rifle or long range varmint rifle for accuracy, the use of a target type scope sight of 10X to 20X is sensible since by seeing better the error in aiming is diminished. PHT

LETTERS

Dear Phil:

Replying to your request for report on the use of crosshairs to detect heat refraction of light. I report almost total failure. Generally the position of the crosshairs changed with passage of time, but obviously this change was due to mechanical causes such as heating of the scope tube, or settling of the stand in the grass. Besides, the mirage condition I wanted most of all was not encountered all summer; this condition is the one in which bullet holes fade clear out. Nevertheless, though the crosshairs failed, this was not due to lack of mirage; for time and again I lost points when the occurrence could be charged only to that cause.

On the other hand my battle with barrel heat was won. In addition to a coat of aluminum paint on the barrel, I employed a contour sheet metal cover which extended from the rear of the receiver to the forward end of the forestock, and had an air space underneath. With this protection the rifle would still group after being exposed all day in 90 degree heat, whereas the year before it began sometimes to fail in the second string of 20. Perhaps aluminum paint alone would have done the trick, for the part of the barrel outside the housing never became more than barely warm.

Further on the mirage subject, I want to report on my annual trip to the old farm-home scene because of the bearing it seems to have. This time, owing to inability to find a suitable place to fire at greater distance, I fired at 50 feet on the 50 foot target.

First day I fired 70 record shots in 5-shot groups at that distance. Conditions were bright sun at 12 o'clock, very light wind at 9 o'clock (effect negligible at 50 feet), and target rings dancing as much with mirage as they usually do at 50 yards. Being after information, I fired with my usual indoor sight setting, and did not move a click, regardless of where the groups formed. In size the groups were much inferior to my usual indoor performance, the shots that spoiled them favoring 8 o'clock evidently because of mirage. Further, between top and bottom row bulls, the vertical zeros differed by about one minute, those on top being lowest, while those on the bottom were lower than the 10-ring center. To prove that the difference was due to conditions, I alternated bulls while firing the last 20 by putting a shot first on the top row, then one on the bottom. All four of the resulting 5-shot groups were tight, but top row zeros were at least a minute lower than bottom row zeros.

Next day I fired 30 shots in late afternoon when the firing point, range, and target were in shade. All six groups were tight, and all centered about the indoor zero. According to this result the faults of the previous day evidently had been due to mirage, and the lack of fault on the second day was due to lack of direct sunlight, and therefore to conditions which approximated the indoor.

Thus it became evident that, whether or not the wind blows, direct sunlight casts heavy odds against the outdoor prone shooter. In these experiments the range was only one-third the 50 yard range, but the number of minutes between top and bottom bulls is about 39—three times the number between bulls on the standard outdoor target. Thus the mirage handicap perhaps equalled what it would have been on the 50 yard target.

Jesse M. Grigg
Chicago, Illinois

Dear Mr. Teachout:

For a number of months now I have had the pleasure of reading **PRECISION SHOOTING** from kiver to kiver and find it most interesting and informative. As phrased by Mr. Harton, in his letter, (published in the September issue) it is "right down to the level of us all, contributed by shooters."

However, I would like to add my comment that the letter of Mr. Nordquist, which follows the first, does not impress me as looking toward the betterment of the "shooting game" as a whole and conveys no benefit of any kind upon anyone who reads it except as it provokes a reply.

Freely admitting Mr. Nordquist's right to select his own reading matter and to enjoy whatever form of shooting he finds most rewarding I still plead for a broad interest in shooting rather than a narrow one. I'm even willing to risk getting a lame arm from patting myself on the back to cite myself as an example of what I mean.

I am not a bench-rest shooter nor am I a competitive shooter or even a plain target shooter. I just like to hunt and, to me, all other forms of shooting are simply helps to me in increasing the pleasure which I derive from hunting. But they are very real helps and, to the extent that they add to my enjoyment, they command my continuing interest and support. Take bench-rest shooting as an example—there is no better way to discover and to develop the potential accuracy of a hunting rifle than to sight in and to develop proper loads using a bench-rest and borrowing some of the techniques of the experts in that field. So, to a hunter, bench-rest shooting becomes a valuable and interesting adjunct to his chosen form of powder burning.

A good writer could compose a paragraph or more comparing the mental concentration and the control of the nerves necessary alike to the competitive shooter in a tight match and the hunter aiming at the prize animal of his hunting trip. Each can learn from and give help to the other. Their collective knowledge can and should be shared.

Comes next the thought that without the help of the several publications which more or less do specialize in some particular aspect of shooting our acquaintance with the technical developments in arms, ammunition and accessories would suffer immeasurably and we soon would become "back numbers" in these departments.

So, I do hope that all of us may see the pleasure and profit to be gained by taking an interest in the entire small arms field and realize that we still can direct the emphasis of our personal participation in shooting into whatever form or degree of specialization may please us and still not be either selfish or narrow.

Sincerely yours,

Allan S. Noves
Amherst, Virginia

Dear Mr. Teachout:

The Johnstown (N. Y.) shoot last year was my first and to date only experience with a formal bench rest rifle tournament. I have been reading your interesting magazine for maybe two years and have been shooting a M70 Target rifle in .270 cal. at chucks and at targets, both prone and from the bench for several years.

This all adds up to not very much in bench rest background and as I study the pages of **Precision SHOOTING** I
(Continued on Page Eighteen)



Ruth Tohill, California State Women's Champion for smallbore rifle, member of international ladies' rifle teams and a worthy opponent in open smallbore competition, anywhere, anytime.

THE TOURNAMENT CIRCUIT CALIFORNIA STATE SMALLBORE CHAMPIONSHIP

Cliff Pierson, Sun Valley, Calif. scored 3192 to beat the field of 61 competitors to win the 1958 California State Smallbore Rifle Championship at Fresno, Oct. 4 and 5. He also won the iron sight aggregate with a 1595, beating Forrest Kline, Pasadena, and William Grater, Oxnard, both with 1592 scores.

A. Willbrandt, Montebello won the any sight aggregate with a 1599, over George Merrell, Camp Pendleton, with another 1599 and defending champ Jimmy Williams of Pasadena with 1598.

In addition to Pierson, winners of 1958 California State Smallbore Team brassards were: Jimmy Williams 3188; Forrest Kline 3187; William Grater 3187; Walter Kamila, Los Angeles, 3186; Dick Burkhardt, Hermosa Beach, 3185; James Bell, Santa Monica, 3184; A. Willbrandt 3184; Conrad Rasmussen, Oakland, 3184; Homer Tohill, Woodland Hills, 3181; Wm. Stephens, Sacramento, 3181; and George Merrell 3181.

All matches except the 100 yd. iron sight (which James Bell won with a 399) were won with 400 possible scores. Willbrandt was the only shooter to win two matches, the Dewar any and 50 meter any.

Henry Wright

AN IDEALLY CONDUCTED PISTOL TOURNAMENT

Two days of showery rain did not dampen the ardors of the contestants in the Twelfth Annual Pistol Tournament of the Westchester County (N. Y.) Police Rifle and Revolver League, held September 20th and 21st.

This is a police type tournament with regulations differing in a number of ways from those of the registered NRA shoots. The target is the familiar Army "L" with five-inch ten-ring, and an X-ring added. Slow fire is at twenty-five yards, four minutes for ten shots. Time fire is at twenty-five yards, two five-shot strings in fifteen seconds each. "Rapid

fire is at fifteen yards, two five-shot strings in eleven seconds each. The same thirty-shot course is fired with all three calibers—.22, .38 and .45. Matches were not separately fired, and part of the line could be firing a .22 match while another part fired .45, the timing being the same.

Including team matches, there were seven matches for members of organized police departments, and six for civilian members of local gun clubs. Civilians did not shoot against police, or vice versa.

The amazing thing about this Westchester shoot is the speed with which it was handled, with at the same time an entire absence of hurry. Everything was done to simplify and standardize the procedure. No alibis nor refires were allowed, except where the trouble was beyond the control of the shooter. Every gun had to fire, or else. The result was a beautiful absence of the exasperating delays which plague the shooter in many registered matches. There was a range officer for every four shooters, and the target boys snapped the targets on the instant each target was scored. No heavy consultations were allowed at the targets, and if a score was in dispute the target was ripped off and taken to the rear to be judged. The result was that the shooters were back on the line getting ready for the next string in an incredibly short time—incredibly short, that is, to one who is used to the usual registered shoot in which one scorer to as many as twelve shooters is not uncommon. For instance, the writer fired four matches, one hundred and twenty shots, having arrived at the range at 9 A. M., and was all through by 12, and driving home for lunch.

Another point. When the chief range officer started his series of firing commands, he carried right through to the turning of the targets. There was none of that "As you were" business due to an assistant range officer having signalled "ready" when one shooter was not
(Continued on Page Fifteen)

SILVER SOLDERING FOR THE HOME GUNSMITH

Frank de Haas, Orange City, Iowa

Time was when the amateur gunsmith had a hard time repairing and remodeling many small parts that required additional metal to be put on, or needed parts to be joined together by welding. For instance, take an extractor from any single shot rifle, they always needed repairs and alterations if the action was to be fitted with a barrel firing a smaller cartridge. The usual thing to do was to take the extractor to the nearest welder in town, BUT, there was many a slip from here to the time the extractor got back in the rifle and working properly, believe you me. Most every gun tinkerer knows the story—the welder was not in the mood to weld for a gun nut, too busy to mess with gun parts, the part was too small, "leave it and we'll do it next week," too lazy to change tips so either burned the metal or left it full of pin holes, etc., the tale is endless. And the hobbyist could do nothing about it, except look for another welder that was more patient, because the amateur gunsmith could not afford welding equipment, and if he could he would not likely have the skill or the chance to learn the technique of welding to do it right. But today the modern amateur gunsmith has available to him, for a very modest cost, a means of joining metals together in a very strong bond for repairing and remodeling small parts, and that is with silver solder and the handy LP hand torches.

Silver soldering, or hard soldering as it is generally called, is highly applicable to work on firearms and the gun hobbyist will find endless uses for it in mending and building many small parts. However, the size of the silver solder job is only limited to the amount of heat that is available, so for the tinkerer using the small LP torches, the jobs will have to remain small ones, which most of them will be. Silver soldered joints, if properly done, are as strong as if the part were of one piece and is generally much more useful than either electric or oxyacetylene welding, since no special skill or expensive equipment is needed. Also many a small part is ruined and made worthless in the attempt to repair these by welding, even by expert welders. But a silver solder repair, though not done correctly the first time, may be salvaged and redone several times with no undue harm to the part. This may be very important when working on parts from old guns.

For the home gunsmith all that is needed for silver soldering is a small supply of silver solder, flux, and a heat source. The silver solder can be purchased from gunsmith supply houses advertising in the American Rifleman or from many hardware stores. It is available in several different forms such as paste (combined with flux), ribbon, and wire. I much prefer to use it in wire form, although the paste and ribbon forms have advantages in certain types of work. It is also made up in several different alloys that have different melting points, from as low as 800 to the high of 1600 degrees, but the silver solder that has a melting point of 900 to 1300 is the best for the amateur and will take care of all jobs. Flux usually comes with the solder, and now-a-days, with silver solder coming more into use, it can be purchased in kits, complete with a couple different silver solder alloys, jar of flux, and the important instruction sheet for its use.

For the heat source the home gunsmith should get one or two, preferably

two, self contained LP hand fuel torches with throw-away tanks such as the Turner, Bernz-O-matic, or Prepo hand torches, available from any hardware store. All of these provide ample heat for all small jobs and with two torches on the work, will handle medium sized pieces. These torches develop a flame temperature of 2000 to 2500 degrees or more. Instead of the smaller hand torches with throw-away fuel tanks, you may wish to invest a little more and be able to handle larger pieces of work and for this the larger refillable LP hand torches work fine. Even better and larger torches are available from plumbing supply houses that employ a hose from a regular small sized LP tank to the torch tip, and these tips may be had in different sizes. There is also the slightly more expensive Presto-lite torch, but special gas must be used in this. For the largest jobs such as fitting a ramp sight to a rifle barrel, still more heat is needed and it is best to leave this to the shops that have oxyacetylene heat. The small jobs will out number the larger jobs ten to one and these small low cost hand torches will do a fine job.

The simple instructions that come with the silver solder should be carefully followed and briefly they are;—The surfaces to be joined must be 'file' clean, not only the butting surfaces, but the close surrounding areas as well, of all rust, dirt and oil. The parts should be carefully fitted without gaps, with a clearance of .001 to not over .003, because these close fittings make the strongest joints. Then the joining surfaces need be fluxed and held together while the heat is applied. The heat or flame should be first applied away from the joint to preheat the part and to prevent burning off the flux, and as the part starts turning to a very dull red, the heat then can be directed on the joint. Then as the joint becomes red and the flux becomes a molten clear liquid, touch the silver solder to the joint and it will instantly melt and flow throughout the joint. Simple, yes, all but the holding together of the parts.

Supplying a holder for the parts

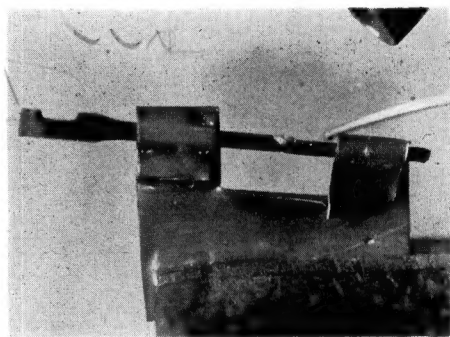


Fig. 1 Here is a jig or holder made to hold a firing pin while it is being silver soldered. If properly done, silver soldered joints are as strong as the original piece.



Fig. 2 Repairing an extractor from an old single barrel shotgun by silver soldering on a godo sized piece of metal that later will be cut down and fitted. A thin strip of sheet metal is used to hold the parts together while soldering.

while they are being joined with silver solder requires a bit of ingenuity on the part of the home gunsmith, because without a holder or jig of some sort to hold the parts in line, steady, and together, he

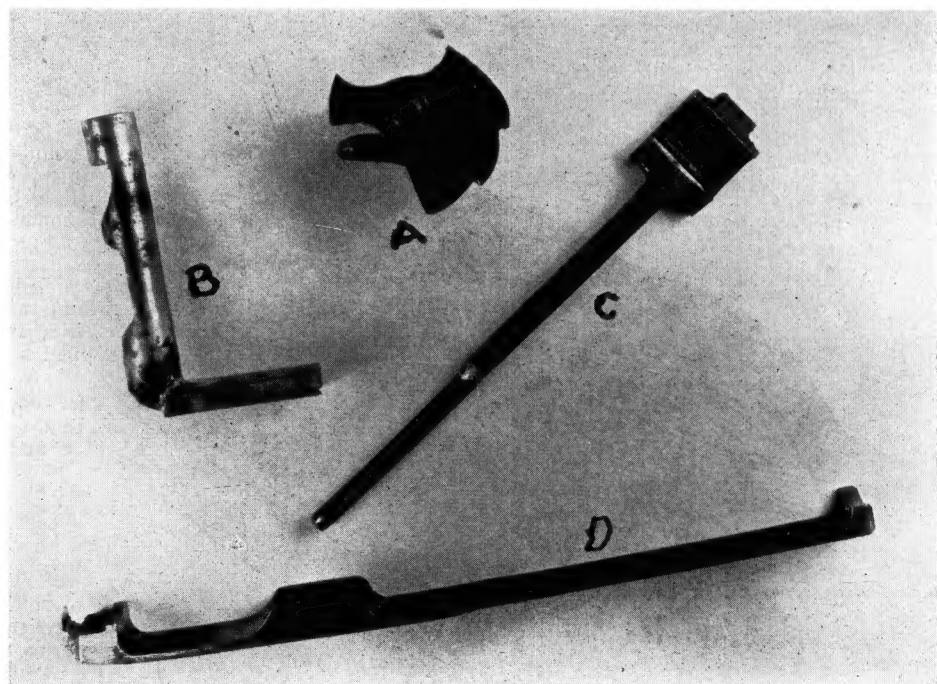


Fig. 3 Parts that can be readily repaired and altered with silver solder. A, Tumbler from a double shotgun that has new notches of tool steel silver soldered in place. B, shotgun extractor with a new lip that still has to be dressed down. C, firing pin. D, extractor from Mauser that has a new hook.

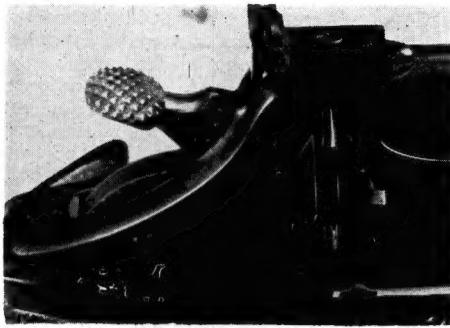


Fig. 4 This new spur is attached to this S&W hammer with silver solder.

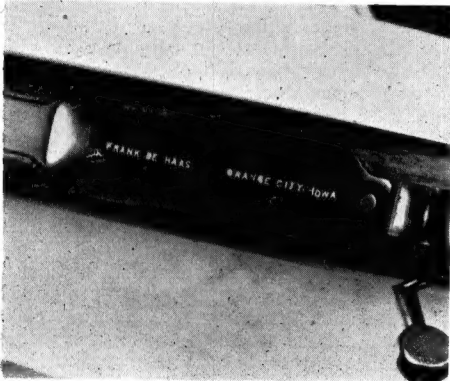


Fig. 5 Letters stamped in metal, then filled with silver solder, offers attractive and low cost engraving on a floor plate, easily done by a gun hobbyist.

will find that two hands are not nearly enough, and even with the extra hands of a bystander may not still be enough. Therefore a holder of sheet metal, wire or of some sorts must be rigged up for practically all silver solder jobs and will result in more accurate and stronger joints, as well as getting the job done right on the first try.

Most parts may be held together while silver soldering in holders made of wire or sheet metal. Figure 1 shows a broken firing pin that is held in line and together in a holder made from a piece of sheet metal and figure 2 shows a very simple method, with the aid of a little strip of tin, to hold a piece of metal that is to be joined to an extractor from a single barrel shotgun. Many other set ups and gimmicks will suggest themselves for other small parts, and the time it takes to rig up a holder will be time saved later on.

Flat parts may be joined together by laying them on a piece of asbestos paper which is in turn lying on a flat steel surface. A U made of wire and weighed down with the ends of the U on the two parts to be soldered will help keep the parts in line. The asbestos paper will keep the heat from going out of the parts. When it is up to welding heat, gently touch the wire solder to the joint without disturbing the parts, or hold the solder ever so close over the joint and let the flame melt a drop from the wire and this will form the joint when it falls on it. If the parts do get out of line, then re-heat or retain the heat, and with the tip of a screw driver carefully re-align the parts.

Another way to hold many parts together for silver soldering is by employing a dovetail, screw or pin, and the silver solder will flow in and weld the whole mess together. On parts that show on the outside of the gun, the joint should be fitted very closely and the thin line of silver will hardly show and will not be

too objectionable. On parts inside the gun, the joints need less care in fitting, but remember that the joints with the least amount of solder are the strongest.

MANY USES FOR SILVER SOLDER

Silver solder has many uses besides the joining of broken parts. One of the most common uses for which it can be employed is in lengthening screws for many remodeling projects. Simply saw the screw or bolt in two and silver solder a piece of rod in between. A new head may also be put on a screw or a new shank for replacing the threads. I have lengthened guard screws on the Enfield rifle in this way and they are strong, being unable to break or pull them apart regardless of how tight they were turned. Every home gunsmith does a lot of tinkering with and on sights and silver solder will prove useful in repairing, remodeling and installing front and rear sights on both rifles and handguns. Fitting a solid blade sight to a ramp or fitting blade sights directly to the slides of automatic pistols and barrels of revolvers, silver solder will make it a lasting job. Most ramp sights may be installed satisfactorily on rifle barrels with soft solders (lead and tin alloy) by sweating and screwing them on, or by using the low melting (600 degrees) silver-lead alloy for a still stronger bond. Also a little drop of silver solder on the tip of a blade makes a suitable imitation gold bead.

The hammers from most guns are one of the parts that wear and break most often, especially on some revolvers, and many shotguns, and the home tinkerer can often repair these with the aid of silver solder. If the notches are worn or broken off the hammer, then grind off plenty of metal where the notches were and replace this metal with a piece of tool steel by silver soldering it in place. This is then shaped and new notches cut, resulting in a satisfactory repair. Although the hammer (or tumbler) and the new insert then cannot be hardened, the tool steel insert will usually be hard enough to stand a lot of wear, and may actually wear longer and be harder than the original notches.

New wide and cock-eyed hammer spurs may be added to revolver hammers by silver soldering a piece of metal to the old spur. For a wide spur like illustrated in Fig. 4, first grind the old hammer spur off flat, then take a 1/4 inch section from a 1/2 inch rod and cut a snug recess in it so that it will fit friction tight on the old hammer spur, (or slightly dovetail the two pieces) so that no holder need be used in silver soldering it. If the lower portion of the hammer is held in a vise and the spur quickly heated and soldered, it will not effect the hardness of the remainder of the hammer. After it is soldered the new spur is then filed to shape and checkered.

Another very important use for silver solder is in the rebuilding and remodeling extractors as mentioned before, and will result in a better job than when other welding methods are used. Because extractors are subject to rough usage, twisting, cramming and prying, nothing should be done to them that might weaken them in any way, and silver soldering won't do that. It is best to cut the old extractor back further from the tip, or the entire old tip removed, and then a new tip of much more generous size joined to it. The new piece that was added on is now filed and fitted to the rifle. Another type of extractor, like that found on the Winchester Low Wall and Remington Rolling

Blocks and other rifles in .22 caliber, are often worn and eroded so bad that they no longer support the cartridge head or extract them later on, can easily be fixed. First cut out a goodly portion of the extractor notch, either square or round, and into this fit a piece of metal that is slightly thicker than the extractor. Then silver solder it in place and file it down to original thickness and recut the notch. The extractors like the Krag and Mauser type can be extended to hook the rim of smaller cartridge heads, first by cutting back the tip and then silver soldering on a longer and larger piece of steel, this to be fitted and cut down to fit.

The making of, repairing and altering cartridge clips and box magazines is another job made easier with silver solder. Clips have a habit of coming apart at the seams or the spot welds let go, so clean the edges, apply flux, heat and silver solder. (Of course the spring must be removed first.) Keep silver solder in mind too when thinking about shortening a box magazine, like on a Mauser, to hold shorter cartridges, or for making one longer, like on a M-70 Winchester Hornet to handle the .222 Rem. case.

One use that I make of silver solder that is both novel and attractive, is in the so-called engraving of letters on the floor plates of rifles, Fig. 5. This is very easily done and the gold colored silver solder shows up well against the background of gun blue, and its neatness depends upon the lettering being straight and even. (I failed to do this in the illustration.) The process is simple. Polish the floor plate and with small steel letter stamps, imprint the words wanted like the name and address of the owner. Then cover the letters with flux, heat with two torches from the underside and deposit enough silver solder on the letters to fill them completely. Now file and polish away all the surplus silver, leaving only the impressions of the letters full. Now it must be blued, and it will come out of the bluing bath shiny bright. Some plates will warp slightly during this operation (heating) but they are quite easily straightened and this should be done before it is polished.

One or two of these small LP hand torches will do many more jobs than I have described, and it does not take long to find out on what size of pieces to stop. So if larger joints are to be made that these little flames won't handle, it is well to fit them up, flux the surfaces, position the pieces with clamps or holders, and with some silver solder along, go to a shop that has oxyacetylene heat and have them flow on the silver solder. I have done this quite often when fitting ramp sights bolt handles and barrel bushings.

The flux must be cleaned from the work after it is finished and a dunking in hot water will remove most or all of it. On small parts that have only very small joints, the filing and polishing that needs be done will remove all flux, and so will the bluing salts. If the flux is not removed it may become troublesome.

Some forms of silver-copper alloys have been used for years by firearms manufacturers (it was called brazing) for such things as joining ribs and lugs to barrels, but it has only been in recent years that low melting silver solders have been used more freely and openly in order to cut down production costs. Remington uses silver solder on the bolts of their Models 721 and 722 hi-power rifles and also to attach ramps sights on their barrels. Other manufacturers also use it, most of the time it is well hidden

(Continued on Page Six)

Silver Soldering For The Home Gunsmith

(Continued from Page Five)

in the action or the joints are so well fitted that the very fine silver lines are hard to spot, like where shotgun barrels are attached to the receivers. It is no disgrace to use silver solder on guns for it does not make them any less strong, nor does it cheapen them in a broad sense, it just gives you more for your money.

GREENHORN BULLET MAKER

Phil Teachout

Ever since home-swaged jacketed bullets proved their accuracy worth in shooting competition I have had a live interest in this subject and have read everything I could find printed about it. But for various reasons, chiefly for lack of money to purchase the bullet making dies and equipment, lack of time and the fact that I do not use large quantities of any particular caliber and type of bullet, I haven't until recently done anything other than read about it.

As is normal, and probably right, those who have written about home-swaging of jacketed bullets have had quite long and varied experience at it. They have pointed out the advantages of home bullet swaging, explained the processes of swaging the bullets quite clearly, and have described the various dies and equipment available and the presses most suitable for this work. The one thing that I have found lacking in all this information has been the pointing out of problems and mistakes (particularly mistakes) that the beginner might encounter.

It is normal for the "Do-it-yourself-er" in any line to make mistakes and turn out a certain amount of scrap material at the beginning of his experience. I have wondered how much one might expect of this in the beginning of bullet making but have never seen any mention of this in the writings I have seen on this subject. I knew that some beginner bullet makers had run into problems at the start, but just how common this was or the reasons for it I did not know. Recently I determined to try to find out more about this and pass along what information I got, if any.

I wrote to Ray Biehler, who with Walt Astles makes the Biehler and Astles bullet making dies and equipment that is in such wide demand, to see what help and information he could give me. Ray recommended various articles on bullet making (which I had long ago read) and sent along a set of instructions for use of their equipment and making bullets with it. A few days later he wrote that he figured the best way he knew of for me to find out what I wanted to know was to try it and find out for myself, and that he was shipping me a set of bullet making dies and equipment on loan to do just that. He also gave some additional information and suggestions to help me get started.

With this interesting chore in prospect, I immediately ordered some Sierra bullet jackets (.22 cal.) and lead wire from Ken Hayward (KENRU RELOADING SERVICE), also in Rochester, N. Y. In the meantime I studied the bullet making instructions in preparation for the actual trials.

The set of bullet dies and the bullet jackets arrived very promptly but the lead wire was a little slower getting here, by express. Incidentally, Ken Hayward does give very prompt service—says he can usually ship within 24 hours after an order is received, except on order received

on Saturday. While waiting for the lead wire I was able to familiarize myself with the various dies and their purposes.

With the arrival of the lead wire my open evenings were filled to the brim for a spell, with some late bedtimes resulting. Here is how I went at it.

Even the instructions for adjustment and use of the dies, and making the bullets, had the cart a bit ahead of the horse at the beginning. They started off with preparing the "Uniform weight, core forming die" for use, its adjustment, way to operate, and its care. Near the bottom of the first page, under adjusting the die, it reads, "have ready a supply of core slugs, these slugs being cut so as to be slightly heavier than the finished cores are to be ($\frac{1}{2}$ to 1 grain is recommended)." The instructions for preparing of core wire for use begin near the bottom of the second page. Obviously, preparing some core slugs from the lead wire was the first step. Though no mention was made of it, it was obvious that to determine the weight of the core slug to be cut, the slug weight **plus** the weight of the bullet jacket should slightly exceed the weight of the finished bullet desired. The simple way to accomplish this seemed to be to put a bullet jacket in the scale pan in addition to the lead wire slug being checked weighed for adjusting the lead wire cutter. That was what I did and it worked OK. The wire cutter is adjusted by means of a flat faced steel disc, threaded to act as a nut on a threaded post—the disc serving as a stop for the lead wire protruding through the cutter—the disc "stop" adjustment being maintained by a lock nut.

Instructions for "Preparation of core wire for use" state that the core wire should be thoroughly clean and reasonably free of any oxide scum before being cut into lead slugs. Instructions were given for cleaning the wire if necessary. I was advised that the lead wire supplied by Kenru did not need any special cleaning. Ken Hayward has his wire drawn in his own precision dies to insure uniformity of diameter, wound on 25 lb. capacity spools and packaged in a heavy cardboard container with wooden ends.

The instructions for lubricating the lead wire core slugs reads: "After the core slugs are cut, they should then be lubricated with a **very thin** film of a light or medium grade of ordinary lubricating oil. Excessive oil must not be used, as the cores will not then form properly in the die. The required film can be put on as follows: (1) drop a batch of slugs in a can or cardboard box, add a few drops of oil and shake; (2) or, roll them around on a clean cloth that has been oiled." I used a light household lubricating oil, putting a handful of cores on a cloth, putting a very few drops of oil on the pile of cores and then rolling in the cloth until all had the light film of oil. After the first batch, less oil was needed since the oil remaining on the cloth supplied some of the lubrication. This method worked OK for me and I had no trouble with core forming from this source.

With an initial batch of 100 plus core slugs cut and lubricated, I then set up and adjusted the Uniform Weight Core Forming Die, with the instruction sheet beside me for constant reference and working slowly and cautiously. This die accomplishes its "uniform weight" function by extruding the excess lead from the slightly over-weight slugs through three bleed holes in the die walls. The punch that forces the slug up into the die fits the die bore very snugly, there being not the slightest extrusion of lead by or

around the face of this punch. The die shapes the core to fit the inside of the bullet jackets, having a very slight taper in diameter and with a slight bevel on the edge of the top end. The "uniform weight" feature is accomplished by the extrusion of excess lead, which takes care of small weight variations in the cut slugs, and is the reason why the slugs are cut slightly over weight.

Working slowly and "feeling" my way, I soon noticed that when the punch had reached the top of its stroke, and that pressure held there, the lead "bleed" continued to flow from the die for a bit, while under pressure. Holding the pressure on a bit to allow this flowing to finish seemed a logical thing to do and I formed the habit of a slight pause at the top of the forming stroke before releasing the pressure on the core. While this kink was not mentioned in the instructions, I was later advised by the die makers that it is a correct thing to do. It seems that the die makers expect the operator to use some commonsense in doing the things that obviously need doing—but I have heard of cases where the operator did not entirely cooperate in this respect.

Under title of "Super Finish Cores" the instructions suggest that: "although it is not necessary for making first class bullets, if you want to make cores that are super smooth and a mirror finish on them, run them through the die a second time, inserting them upside down the second time through. Die should be set to give a very slight bleed on this second time through." I had read about this before and an experienced bullet maker had told me that he did this and considered it worthwhile. Since I wanted to be sure to have the best bullets I could on the first try, I ran the cores through the die the second time.

While this "mirror finish" on the surface of the bullet core may not, in itself, be especially important, it does indicate that the surface of the core has been brought into more uniform contact with the walls of the die, and it would seem probable that slight reforming under pressure the second time through the die would result in somewhat more uniform density throughout the core body. The fact that there is some variation in the amount of "bleed" in this second run would seem to support this probability. At any rate, after this second run through the dies the cores were very, very uniform in weight. I continued this second core forming throughout my trial bullet making. Some bullet makers evidently do not consider this extra work necessary for making accurate bullets, but I do not know whether or not they had made extensive tests before reaching that conclusion.

Degreasing the cores was the next step, and we again quote the instructions. "After the cores have been made, they should then be degreased. This is **VERY IMPORTANT**. Bullets should never be made with cores having any oil or grease on them. Cores can be degreased by washnig with a grease solvent such as carbontetrachloride or gasoline. A method we like better, however, is to place the cores in a wire strainer, then boil them in water to which some strong soap, or better still, one of the 'soapless' detergents has been added. Then rinse in hot water and roll out on a clean cloth to dry. When thoroughly done, this procedure will get the cores so 'chemically' clean that as they dry the air will rapidly produce a light film of gray colored lead oxide over their surfaces. Do not worry about this one bit. We be-

lieve this oxide coat on finished cores is good rather than bad. It helps the cores get a better 'grip' on the inside of the jacket cups." Boiling the cores seemed the simplest method for me, as well as being recommended as best, and it worked out exactly as promised. I usually finished forming a batch of cores late in the evening and immediately degreased them by boiling and let them dry over night.

The next step is seating the cores in the jackets. The B & A dies employ the "expanding up" principle, which means that the bullet is made **bigger** in diameter in the successive steps of swaging. The greater part of this "expanding up" occurs in the core seating stage of making the bullets. The empty Sierra jackets I used are .222 inch outside diameter. The dies I was using made a finished bullet of .224 inch diameter. Earlier it was recommended that the core seating expand the bullet up to .0003 to .0005 inch under the finished bullet size, the final expanding up being accomplished in the swaging and forming operation. Present recommendation is to expand the bullet jacket when seating the cores to from .0001 inch under completed bullet diameter to full bullet diameter, thus doing practically all the expanding up in the core seating operation, and thus disturbing the marriage between core surface and inner jacket surface as little as possible in the final swaging operation.

First step in preparing for core seating is to stuff the cores into the jackets and push them in to a friction tight grip with a wooden stick or punch. As mentioned earlier, the cores are very slightly tapered to fit the inside of jacket which is also tapered. Cores are stuffed into jackets with the smaller, beveled edge end first. Reason for the above operation is that the **outside** of the jackets require a very light film of lubrication to prevent seizing of the jacket in the die, but **there must not** be any lubrication between core and jacket surfaces. Jackets are given the **thin film** of lubricant by working a small amount of lubricant into a clean cloth and rolling, under the palm of the hand, the core stuffed jackets on the cloth. The die makers recommend their own lubricant for this purpose and for final swaging of the bullets.

Working deliberately and following the instructions carefully, there was no trouble in correctly adjusting the core seating die, seating the cores and expanding to the correct diameter—just barely under finished bullet diameter.

In the final operation the bullet is swaged to final form and diameter. The formed bullet is ejected from the die by a plunger pin, the end of which bears on the **rim** of the hollow point cavity of the bullet nose. It appears (and we have heard the same) that incorrect adjustment of the die for this operation can and does cause grief. If the die is not adjusted to force the bullet up into the die far enough to close the hollow point cavity rim small enough to fully support the end of the ejection pin, when one tries to eject the bullet from the die the ejection pin may force itself through the hollow point cavity and under the downward pressure of the hand be forced into the soft lead bullet core. The ejection pin going into the soft lead forces the core against the jacket walls, and the jacket walls against the die wall with a friction pressure to "stick" the bullet in the die. From reading the instructions, from what we have heard and what seemed obvious, getting a bullet so "stuck" out of the die without harming the die, can be a very real chore. I fol-

lowed the instructions for adjusting the swaging die very carefully, worked deliberately and "felt" my way along, and had not the least trouble in the bullet swaging operation.

The bullet jackets need lubrication for the swaging operation, BUT only a very, very light film of it. The maker's instructions and just about every item I have read on bullet making have stressed this **light** application of lubricant in the swaging operation, and there seems to be a rather universal method of applying the lubrication, which is: A small amount of the lubricant used is put on the pads of the thumb and first finger of the left hand (for a right handed worker) and worked into the skin. As the core-seated hulls are picked up to feed into the die they are rolled between the thumb and first finger, thus applying sufficient but not excessive lubricant to the jacket wall. Excessive lubrication of the bullet jackets in this operation is said to cause mis-shapen and wrinkled ogives and noses. I followed the instructions carefully and had none of that trouble. Very fine, longitudinal lines do show on the ogive of the bullets I made, but these lines show on custom bullets I have purchased and even on some commercial bullets (faintly) and they do not seem to adversely effect the performance of the bullets.

With this first small batch of bullets made, the next thing was to see if the things would shoot with any accuracy before attempting to make any more. Loads were assembled with the same cases, powder, charges and primers that I had used with similar other bullets that I had purchased, in both .220 Swift and .222 Rem. cases. The home-brewed bullets shot at least as well as bullets I had previously used, in the same rifles, under similar conditions.

I shot bullets from the second lot I made in the 100 yard matches at the Johnstown Labor Day Matches, in the .220 Swift. I had shot a .220 Swift on this same range, under very similar weather conditions two years earlier, with the best custom hand swaged bullets I had obtained that season, and the same powder charge. My average for five 10-shot matches at 100 yards in 1958 was .050" larger than for six 10-shot matches at 100 yards in 1956. Subsequent shooting in three rifles, the .220 Swift, .222 Rem. and a .219 Don, has demonstrated at least as good average accuracy under similar conditions, with similar loads, as I had previously gotten with bullets that I had purchased, but not noticeably better.

All told, I hand swaged 2,000 .224 bullets with the loaned dies. I am still very much a "greenhorn" at bullet making but I have gained some first-hand facts and formed some 'opinions,' which may have to be changed later. I have been severely bitten by this bullet making bug. While my conditions as stated in the first paragraph are unchanged, I can see that I will have to finagle some means to include this additional chore to my one hobby—guns and shooting.

As for "facts" learned: In making my first 2,000 bullets I did not have a single bullet that I could visually call scrap, and of the bullets shot to date, some 300 or more, I have had only one bad "flier" which may have been caused by an off color bullet, or by something else. I have check weighed and measured "spot-check" portions of each of the five batches of bullets made which, within batches, ran very uniform in weight and all were uniform in dimension. There is some variation in weight between

batches of bullets made. No particular effort was made to keep the weight of separate batches exactly the same, and one batch was purposely made approximately a grain lighter than the others. Since I am not particularly smart, and not a mechanic (though I do some country tinkering), it would appear that anyone capable of handloading good ammunition, who would read instructions and follow them, and use a little observation and commonsense, could start right in making good, serviceable jacketed bullets.

Concerning costs: Equipment for making bullets by the "expanding up" principle, including a wire cutter, will cost from about \$100 for a minimum kit of one make up to nearly \$200 for a complete kit of another make, exclusive of a press. The better presses of the Pacific type will serve for making .22 cal. bullets but heavier, more rigid presses are necessary for making bullets of larger caliber, the heavy model A RCBS press being quite generally recommended. Since even the big RCBS press is quite suitable for loading ammo, the cost of press chargeable to bullet making may be from zero to a portion of the cost of the heavier jobs. Some bullet makers use one press exclusively for bullet making, and one bullet maker has told me that he uses three Pacific type presses exclusively for this purpose, keeping one of the three B&A dies permanently set up in each press—this, of course, keeping his bullets uniform from lot to lot made.

The cost of 2000 bullet jackets and 25 lbs. of lead wire, delivered, was \$39.50 and I have enough wire left for at least another 1,000 .22 cal. bullets. The purchase price of 2,000 bullets would be a minimum \$70.00. Considering just the cost of jackets and wire required as material, it would require the making from 6,000 to some 12,000 .22 cal. bullets to write of the cost of equipment, depending on the completeness and maker of equipment purchased. Ignoring labor and considering equipment cost on a rental or depreciation basis, it would appear that anyone using in the neighborhood of 2,000 bullets a year would be a bit ahead on bullets cost if he makes his own jacketed bullets, at least in .22 caliber.

If the time this writer used for making bullets was considered on a wage basis, he would do better peddling newspapers on a street corner, in a small town with considerable competition. However, most people who would make bullets for their own use would consider it as a part of their do-it-yourself shooting hobby time, which it is. In my own case, if I don't spend some money on bullet making equipment I will probably spend it on some other shooting or gun gimmick, and at the moment I think I would get more satisfaction from the bullet making equipment as a "first" in hobby expenditure.

For shooting people who may keep evening office hours or who may do considerable desk work evenings, bullet making would lend itself nicely to an hour or so of "un-laxing" before bedtime. For any shooting hobbyist, bullet making could add another interesting chore for winter evenings. It's really easy to find good reasons for doing the things one **wants to do**.

Of one thing I am now quite convinced—that the fellows who make custom hand swaged match bullets for sale, at the prices they charge for them, most certainly are not grossly overpaid for the work they do—they must be just a little more "tetched in the head" than the average run of gun-nuts.

POOR MAN'S TARGET RIFLE

By Mason Williams
Stanfordville, N. Y.

This could easily be called a fairy story. A story where the beggar boy in the street becomes the prince and marries the girl. The beginnings of the story are not of interest here. Suffice to say, that curiosity was behind the whole thing and as a result of this I came up with some rather interesting facts.

I started with the premise that regardless of what barrel and action were used, there would be a certain standard than which all else would be better or worse. I was not interested in what size groups were fired. I was interested only in what contributed to enlarging or diminishing these groups. In order to eliminate the ever present price factor and the age old comment "anyone can take a rifle and spend four hundred dollars on it and make it shoot" I purposely chose the following outfit. For over a year a DCM model 03A3 had been propped up in the corner of the shop. It had a two land barrel, a Remington receiver and bolt assembly. That was all. In my opinion, nothing could be more common, more ordinary or just plain more cheap. Oh yes, it did have the issue rear sight.

We rummaged around in the junk barrel and found a front sight, as issue, and drove it onto the barrel, mostly by eye. After the final whack, I picked up the entire combination and brought it home. After a bit of doing, I finally was able to pick up the pieces that make up a trigger assembly and put it together. The stock came from the attic, as issue. However, I did cut off the stock just ahead of the front sling swivel.

When it had been put together, the barrel was definitely full floating. It was not pretty, but it would fire a cartridge and my headspace gauges showed a rather tight headspace using the 1946 gauge. Trigger pull was ghastly. You can use your imagination.

I am not going into the tests that I ran with the rifle because they have no great bearing here, however I would like to mention that they were all bedding tests. I fired several groups from the rifle "as is" to determine what could be expected of the outfit.

Then I tore down the rifle and, using Plastibedding bought from Bishop, I completely re-bedded the rifle. The first step was to take a small, sharp chisel and gouge the wood wherever the Plastibedding would be applied. This would give the bedding something to adhere to and to anchor to.

I then applied the Plastibedding to the rear of the receiver cut, all along both sides of the receiver cut, filled the entire recoil lug cut and what was left I put into the barrel channel. After pulling down the barrel and receiver into the bedding, I let it sit for twenty four hours.

I had a lot of trouble taking the rifle apart because of the tight fit. On examining the bedding, I found that there were still a few spots that needed more bedding under the receiver and also the barrel channel needed quite a lot more Plastibedding. I waited another twenty four hours and then re-bedded barrel and action again. This time, I placed the stock in a vise horizontally and then pulled the receiver and barrel down into the bedding compound. I did not realize it at the time, but a bit of bedding flowed out from under the barrel and down the front of the fore-end tip. I left the rifle this way for about twenty four hours. It turned out to be a perfect bedding job with the receiver entirely supported by the Plastibedding. The barrel was sup-

ported up to about six inches from the fore-end tip. The flowing of the bedding compound during the seating of the barrel relieved the barrel just a bit, enough so that when pressure is exerted the barrel can be moved slightly down.

The next step was to find out if the rifle would shoot. If so, would it shoot better or worse than the miserable results I had obtained from my previous bedding trials. Using the same TW ammunition I had used in the other tests, I commenced firing.

I would like to point out at this time, that all firing was done from heavy sandbags at a bench rest at a distance of two hundred yards. All groups were measured center to center of maximum spread, one measurement. I used the Army two hundred yard rifle target so that I could move my sights and fire many groups on one target. Then I could cut the groups out of the target and file them for reference.

My first shot was quite low. In order to bring the shots into the black, I had to come up 250 yards in elevation. I had expected the contrary, since the last groups fired with the rifle had been fired from a free floating barrel. The ten shot group was tight, even and round. Barrel heat had no effect on the group. Strange to say, rifle handling was clean and predictable. I could call my shots. Group size ran $5\frac{1}{2}$ inch.

I had loaded up two other loads. 150 grain Remington BT precision bullets with 48 grains of #4895, and a second load of 172 grain M1 BT bullets and 48 grains of #4895, both loads using the Remington No. $9\frac{1}{2}$ primers. Just for the fun of it, I also loaded up a few rounds using the same components but changing the bullets to 150 grain Sierra SP.

The Sierra bullet loads shot inside $4\frac{1}{2}$ inches. Nice, tight groups.

The Remington 180 grain BT ran just about 4 inches consistently. The M1 bullets ran about $\frac{1}{4}$ inch less average. Grouping with the M1 bullets was slightly tighter.

Compared to the results I had obtained prior to Plastibedding, these groups were enough to rattle my teeth.

That night I loaded 150 grain M2 bullets with the same components to find out what would happen in comparison to the TW service ammunition.

The following day, I took the remaining cartridges and went out and shot additional groups to verify the preceding day's results. The M1 bullet loads gave a ten shot group of $3\frac{3}{4}$ inches, this included one high spot, the balance of the group being less than $2\frac{1}{2}$ inches center to center.

The Remington 180 grain BT bullet load gave a group of nine shots in a square $2\frac{3}{4}$ by $1\frac{3}{4}$ inches with a single shot low and right bringing the maximum center to center outside shot measurement to $4\frac{1}{2}$ inches.

This definitely confirmed the preceding day's groups and the ability of the rifle to shoot this type of groups two days in a row. On both days, the majority of the shots in each group ran considerably less than the maximum center to center measurements. That is, eight of ten shots would be in a small group, the one or two outside shots being responsible for the maximum measurements. With my old eyes and iron sights, with varying light conditions, I feel this is pretty good shooting for a cheap clunker of a rifle.

Then to top off the day's firing, I fired a group using the 150 grain M2 bullets. This load shot a maximum ten shot

group of $4\frac{7}{8}$ inches, with two low shots, the remaining eight shots being inside $3\frac{1}{2}$ inches. Again, this was a tight group.

On cleaning the rifle, and purely by accident, I discovered that there was a great deal of play in the rear sight windage screw, so that the rear sight could be pushed either way.

Anyway, after thinking over the results of two days' shooting, I tore down the rifle and honed the trigger pull. It had been so bad that I concentrated more than necessary on trigger pull. Now, it is clean and not too bad, just a simple job that anyone can do. I did not cut down anything. I merely honed the bearing surfaces of the sear and trigger notch.

To really finish off the rifle, I gave the stock one coat of Fraser's stock finish, inside and out, but avoided getting the finish on the Plastibedding.

After assembling the rifle, I came to the conclusion, that never in my life had I ever seen a more weird contraption. It now looked ready to change tires and jack up cars. Total investment to date about six dollars.

I decided that there was nothing left to do but try the rifle again just to make absolutely certain that the groups it had fired the preceding week were not flukes. So I loaded up cartridges using the 172 grain M1 bullet, staying right with the 48 grains of #4895 and Remington No. $9\frac{1}{2}$ primers.

The weather was cold, windy and quite cloudy generally, but with alternating sun and overcast. The ten shot group fired in the morning, from a cold, clean barrel, measured three inches center to center. A very nice compact group.

I then waited until afternoon to fire a second group. This second group was fired without cleaning the rifle, commencing with a cold barrel and firing at least four shots a minute. There were two reasons for firing relatively rapidly. First, I wanted to find out if the barrel would walk. Second, it was raining lightly in large drops and I wanted to keep from getting too wet. I also wanted to fire the entire group during the overcast but did not succeed in doing this, since the sun came out abruptly and the rain stopped. The ten shot group measured $3\frac{3}{8}$ inches with one shot out to the left. The other nine shots are within three inches center to center.

Without counting my time, the total cost of materials used come to less than six dollars. The work that I have done can be duplicated by anyone owning a DCM Springfield. Those who have four groove barrels should be able to obtain even better accuracy, since the two groove barrels are not quite up to the four groove barrels.

It would appear that given a reasonably good barrel and good headspace, that a man could end up with a rifle capable of giving the very finest accuracy simply through Plastibedding both barrel and action. There certainly is nothing difficult about it. In my opinion, a fine match rifle is within the reach of everyone, providing he has no illusions of grandeur. The results, visually, are not nice, but if looks are important, then go ahead and spend four hundred dollars and see if you can better the above groups with iron sights. If so, write and let me know.

I say this, because some of my really fine rifles do not shoot a bit better than this clunker. Frankly, I am the first to admit that perhaps I have hit a fluke combination of components and misc,

that happen to give this accuracy, but I seriously question it. If anyone tries the above work, I would appreciate hearing from them regarding the results.

All I can say at this stage is that my experience indicates that this is really the poor man's target rifle.

RWS-SINOXID PRIMERS

Under quite extensive test, these primers bear out in good measure the claims of the manufacturers and distributors. Uniformity, at least in the Small Pistol primers tested, was found to be well up to the highest of primer standards. In order to test out this vital characteristic, very light powder charges were used in .38 special, the charges being carefully weighed, and bullets carefully selected. It was felt that by this means any variation in ignition would be more readily apparent. While the vertical dispersion in the resultant groups was greater than the lateral, it was not more than would be expected, and in fact was somewhat less than the vertical dispersion in the case of two other makes of primers tested in the same way at the same time.

One feature is R W S primers, which seems to this writer to be of outstanding importance, is not mentioned in the distributor's literature. This is their fine sensitivity, since they do not require as heavy a blow to insure discharge, as many of the standard makes. In this respect they are rivalled by only two other makes of primer, at least in the Small Pistol size. This factor is of prime importance to the double-action pistol shooter, who cocks the hammer with his trigger finger, pulling against the full weight of the hammer spring. This shooter finds it most desirable to reduce hammer spring tension as far as possible without causing misfires or affecting accuracy. R W S primers may save this man several ounces of trigger weight, particularly if shooting a Smith & Wesson revolver, where hammer spring tension is easily adjustable.

Good sensitivity is also important in the case of a "tired" hammer spring, particularly in today's short action guns, which of course require heavier spring tension than the old long action guns in order to deliver the same weight of blow, due to the shorter hammer throw. In other words, RWS primers could be considered to provide insurance against ignition misfires, which in the natural cussedness of things seem to occur usually in the rapid fire stage of a hot competition, although the gun may have fired perfectly hundreds of times in previous practice.

RWS-SINOXID Primers in large and small sizes for both pistol and rifle, are of course non-corrosive, are claimed to be unaffected by extreme temperature conditions, as well as long periods of storage. They are distributed by the Los Angeles Police Revolver & Athletic Club, 1880 North Boylston St., Los Angeles 53, California. They are priced at \$9.50 per thousand, in boxes of 250.

Wm. E. Peterson

We would like more dope on target handguns, their management, care and upkeep, and handloading ammunition for the center-fires.



Bill Atkinson of The Atkinson & Marquart Rifle Co. holding a dainty little .17 A&M cal. rifle built on a Remington-Hepburn action.

THE 17 A&M RIFLE

Bill Atkinson of The Atkinson and Marquart Rifle Co., Prescott, Arizona, had a .17 caliber rifle with him at the Redfield Match in Denver which attracted considerable attention there.

The rifle (shown in photo) is a .17 A&M and was built on a Remington-Hepburn action. The action has had a straight line firing pin installed, actuated by a "flipper" on the back of the block reaching down to the hammer. The tangs have been bent and the upper one cut off to give a pistol grip and then a stock bolt is run through the stock to a lug fastened on the bottom of the upper tang. It is also necessary to reduce the size of the firing pins on most of the single shot rifles. As in this case, the rifle was originally a .45-70. The scope bases are made in the A&M shop to incorporate the use of Buehler rings. These bases can be made to fit any size action and barrel contour. The barrel length on this rifle is 18 inches and is .470 inch at the muzzle. The overall length of the complete rifle is 33 inches with a weight of 7 pounds including the 6X Pecar scope.

The .17 A&M cartridge was developed by The Atkinson and Marquart Rifle Co. after experiments with several cases. It is based on the .218 Bee case, blown out to minimum taper and with a 33 degree shoulder. The case is shortened just enough to make it necessary to trim, and the necks are then reamed on the inside, making the inside and outside concentric.

.17 A&M cartridges were chronographed on an electric chronograph by C. H. Stocking, Hutchinson, Minn., with the following results. With 2400 powder and 25 grain Sisk bullets; a 9 grain load gave 3124 FPS, 10½ grains gave 3688 FPS and 12 grains gave 3923 FPS. With 4227 powder and 25 grain Sisk bullets; 9 grains gave 3030 FPS, 10½ grains gave 3448 FPS and 12 grains gave 3846 FPS. These velocities were obtained from a 20 inch barrel.

The .17 A&M can be built on any good single shot action such as the Winchester Hi-Wall, Remington-Hepburn, Stevens 44½, Sharps-Borchardt, or the Sako .218 Bee bolt action. A&M make another 17 cal. called the .17 Javelina, of which more later.

Coming—a comprehensive article on double-action shooting the target revolvers in competition. Handgunners won't want to miss this one.

NEW LOAD EXPERIENCES

by Fred W. Hallberg
P. O. Box 353, Yorktown, Va.

Apologies are due a lot of people because of my neglect of the shooting game during the past nine months. Last Spring I was so far under the weather that I just didn't care to shoot. Even my wife agreed something was wrong when that happened. Then, just as I was beginning to come back to life, the Army suggested I should try to fill an empty billet at the Transportation School at Fort Eustis, Va. I accepted, thinking it would be just one more of those temporary arrangements we all run into from time to time. I've now been at Fort Eustis five months and it almost begins to look permanent. In the meantime, I have located that nice little Lafayette Rifle Club range, Yorktown, Va., where I have had an opportunity to do a bit of experimenting. Perhaps my observations concerning some of those tests will be of general interest. I should add that, as a civilian employee, I am not eligible to use the Fort Eustis range for practice or test purposes.

30 Caliber, 200 grain, Sierra Match King Boattail Bullet:

Last Spring I received 100 of these bullets for test. Forty have now been fired in standard 30/06 cases using 56 grains #4831 powder over a Federal primer. Four groups of 10 shots each were fired at 200 yards in a heavy 15 pound target rifle fitted with a Fecker scope. All shots were fired from the prone position on a very comfortable mattress. The smallest group was 1¼ inches in diameter, the largest 2½ inches. The four 10 shot groups just about averaged 2 inches. I am one of those people who seem to shoot just as well prone as from a bench. That is because I have never learned to shoot properly from a bench rest. The primers appeared quite flat but that was no indication of pressure because the cups of that particular lot of primers appeared to be softer than normal. Other than that, the cases showed no signs of excessive pressure.

The load chosen happened to be just the first of several tests I wanted to make. Nevertheless, the results are already good enough to make me want to use that bullet in the first long range match that comes along. I am convinced it is worth a good trial and I hope some other shooters will also give it a good work out (and report results). It should be excellent for long range wind-bucking accuracy. The only requirement is that you shoot it in a 10 inch twist barrel if you use the 30/06 caliber. Whether or not a 12 inch twist in some of the big magnum rifles will produce enough velocity to stabilize the bullet, I do not know. I do not have a magnum rifle with me. I would also like to find out if the jacket on that 200 grain bullet will be strong enough to take the high velocities and high pressures which magnum loads are capable of producing. As I have repeatedly pointed out, it is necessary that

(Continued on Page Eighteen)

SHOOT!

"Harvey Jugular Jacketed" & "Harvey Prot-X-Bore" Zinc Base Swaged Handgun Bullets.

Moulds, Swaging Dies 38, 357, 44 cal. & 45. .224 Kay-Chuk Handgun Conversions. "Harvey .429 Maglaska" Rifles. Send 25¢ in coin or stamps for information including loading tables for handgun calibres.

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LAKEVILLE ARMS INC.
Lakeville, Conn.

National Bench Rest Shooters Association, Inc.

1958 NATIONAL BENCH REST CHAMPIONSHIP STATISTICS AND COMMENT

Equipment used by the TOP TWENTY in the National Championship Aggregate, listed in order of ranking in the aggregate.

	Caliber	Barrel by	Action	Scope & Power	Powder	Bullet	Primer
Robert W. Smith	.219 Don	A. L. Day	Mausers	Unertl 24X	3031	Own	Federal
Ted Holmes	.219 Don	Ted Holmes	S & L	Unertl 30X	3031	Holmes	Federal
Paul Gottschall	.222 Rem.	Hart	Own	Unertl 24X	4198	Own B&A	Remington
Harold Shipley	.219 Don	Hart	Mausers	Lyman 30X	4198	Brown	C. C. I.
W. M. Brown	.222 Rem.	Douglas	Rem.	Lyman 25X	Ball	Brown	Remington
Chester Benjamin	.219 Don	Douglas	Mausers	B&L 8-24X	3031	Own	Federal
Alfred W. Walter	.219 Don	Hart	S & L	Unertl 24X	3031	Own B&A	Federal
Lyle Heap	.219 Don	Hart	Mausers	Unertl 36X	4227	Own B&A	Winchester
Ed McNally	.219 Don	Hart	Forster	Unertl 36X	3031	Own B&A	Federal
Joseph W. Looper	.222 Rem.	Douglas	Rem.	Unertl 24X	Ball	Own B&A	Remington
Harold Haynam	.222 Rem.	Johnson	Mausers	Unertl 24X	4198	Own	Western
George Kelbly	.222 Rem.	Douglas	Bellows	Unertl 24X	Ball	Berger	Western
Donald Smith	6m/m	Douglas	Mausers	Unertl 24X	Duplex	Own B&A	R. W. S.
Dr. A. G. Parker	.222 Rem.	Pride	Weber	Unertl 24X	4198	Own	Western
George McMullen	.222 Rem.	Douglas	Win. 70	Unertl 15X	4198	Own B&A	Remington
L. F. Carden	.222 Rem.	Hart	Win. 70	Lyman 30X	Ball	Own	Remington
C. C. Hankins	.222 Rem.	Hart	Rem.	Unertl 20X	Ball	Own B&A	Federal
Clair Hollingsworth	.222 Rem.	Hart	S & L	30X	Ball	Own B&A	R. W. S.
Clyde Yockey	.219 Don	Douglas	Rem.	Unertl 24X	3031	Own	C. C. I.
Irven Mohnkern	.219 Don	Hart	Mausers	Unertl 20X	3031	Own B&A	Federal

Four reported Bellows Sleeves on actions and it is believed that some others did use them.

Prize awards were made to five places in match and aggregates. Of the 68 that competed in at least some of the matches, 39 placed in the top five in match or aggregate one or more times. In the following statistics on equipment, the first figure after an item of equipment indicates the total number using it and the second figure indicates the number using that item that placed in the top five in one or more matches or aggregates, including the "Top Twenty."

The trend to standardization of caliber and cases used for bench rest competition is emphasized this year. The tally is .222 Remington (40-22), .219 Don (26-15), 6m/m (1-1). Don Smith, National City, Calif., has been stubbornly working with the 6m/m caliber for a number of years and has developed a round in that caliber, using the .219 Don case, which is winning for him.

Douglas and Hart continue to dominate the rifle barrel in bench rest competition but the statistics show that some of the small volume barrel makers also make good barrels. The tally is: Hart (32-20), Douglas (19-13), Johnson P. T. (2-2), Day (6-2), Holmes (3-1), Pride 3-1, "Unknown" (1-1), Apex (1-0). The "Unknown" barrel belongs to William Coleman of Texas. He acquired the barrel in a trade and does not know who did make it. Out of curiosity he put the barrel on an action to try it and it proved a very accurate tube.

The trend to heavier, stiffer, single shot bolt actions for competitive bench rest shooting appears to be increasing. That trend seems to be lapping over into the rifles for other types of slow fire rifle shooting as well, particularly for the difficult and demanding international course position shooting. The tally at the 1958 National was: Mauser, all types (21-12), Remington 722 (17-12), Winchester M/70 (4-1), Schultz & Larsen (12-4), Hart (3-3), Home-made (3-3), Forster (1-1), Weber (4-2), Enfield (1-1), Springfield (2-0). Six reported using Bellows Sleeved actions, with five placing, and three reported other reinforced actions.

This is the first major bench rest shoot that I remember with no one reporting the use of a Fecker scope. The proportion of Bausch & Lomb 8-24 scopes gained slightly over 1957, but Unertl continues to lead the field among competitive bench rest shooters. The

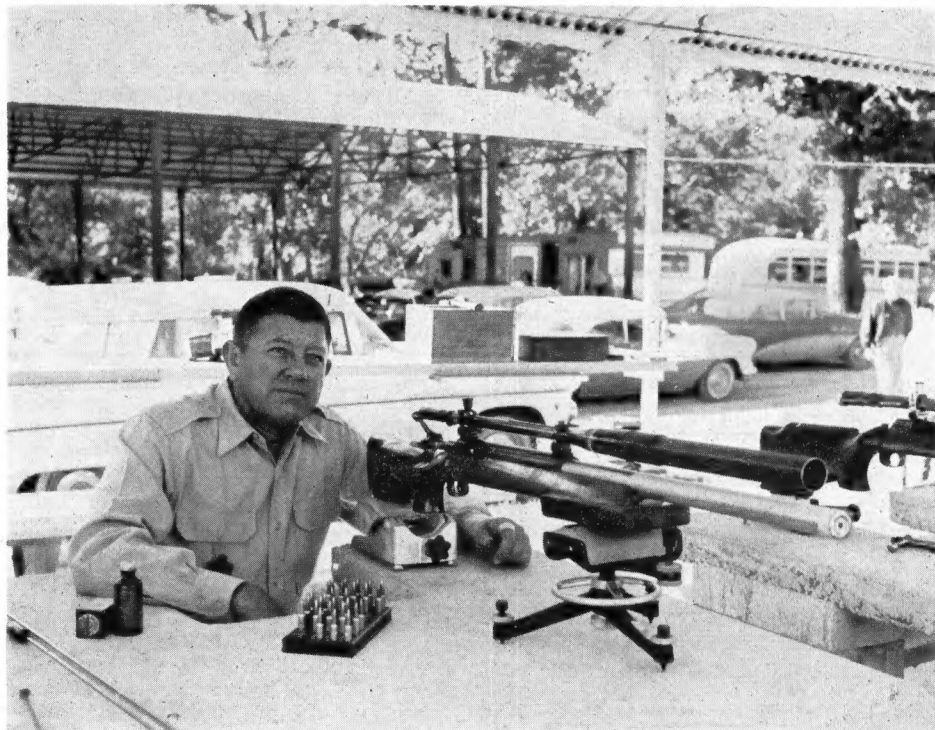
tally at Tulsa was: Unertl (44-29), Lyman (14-5), B & L 8-24 (10-5), Litschert (1-0).

Scopes of from 20 to 25 power magnification are the choice of the majority of competitive bench rest shooters, though shooters using scopes of both higher and lower power do their share of the winning—scope power seems to be an individual personal problem and choice. The tally at Tulsa was: 15X (3-2), 20X (13-7), 24X (28-18), B & L 8-24X (10-5), 25X (5-1), 30X (4-4), 36X (5-2).

Powder loads are a problem of the individual rifle and the bullet used but statistics on the powder types used may be interesting. The tally at Tulsa was: Ball powder (31-14), 3031 (16-11), 4198 (9-8), 4895 (4-2), 4227 (1-1), 4320 (1-0), duplex load 4198 and 3031 (1-1). 3031 was the choice of most of the .219 Don

shooters, though three or four shot Ball powder and others shot 4895. There were two somewhat unusual loads for the .219. Harold Shipley reported shooting 24.7 grains 4198 behind a Brown 51 grain bullet, with C. C. I. primers. Lyle Heap reported using 21 grains of 4227 powder behind his 53½ grain bullets made in B&A dies, and Winchester #115 primers.

The bullet tally at any shoot makes a rather confusing picture. The one point that does stand out clearly is that the hand-made soft-swaged bullets, either home-made or custom-made, are almost the universal choice for competitive rest shooting. The home-made bullet tally at Tulsa was 45-29. By die makers it was: Biehler & Astles 35-22, Bahler Die Shop 2-1, Culver 1-1, not listed 5-5, RCBS 1-0, Beecher 1-0. For the small custom makers it was: Brown (5-4), Ted Holmes



Harold Shipley, Las Cruces, New Mexico, 1958 winner of the SPEER Trophy for the 100 yard aggregate of the National Championship course. In the background is the spacious competitor shelter at the John Zink Range, with the house trailer statistical office and a competitor's camping bus at the right.

Gun Shop (6-1), Berger (1-1), Neumann (2-2), Hollidge (2-1). For commercial bullets it was: Sierra (2-1), Speer (2-1).

The primer tally was: Remington (22-12), Federal (20-12), Western-Winchester (7-5), C. C. I. (11-5), R. W. S. (German) (2-2), not reporting 6. Federal 210 primers seemed a majority choice of the .219 Don shooters. Remington 6½ primers were the choice of many .222 shooters.

COMMENT AND "OPINION": The trend to standardization in cartridge cases for .22 caliber for rest shooting competition is a logical and sensible one. The moderate powder capacity of the .222 Remington and .219 Don cases have proven quite adequate for the required precision accuracy in competitive rest shooting, and those moderate powder charges to contribute to longer barrel accuracy life, which is no minor consideration in this sport. Some of the larger powder capacity cases will give excellent accuracy when loaded with moderate charges, but there doesn't seem to be much need to use a bushel basket to carry a peck of potatoes when a convenient peck container is available.

No caliber has to date equalled the .22 for accuracy under competitive rest shooting conditions. It is only sensible that the shooter who competes to win should stick to and try to further improve the weapon that provides the best chance to win with. With more and better promotion of competition with the Varmint and Sporter class of rifles, we may reasonably expect some worthwhile improvement of accuracy in the larger calibers. However, this writer will expect that the promotion of Varmint Rifle and Sporter Rifle rest competitions will encourage the use of the smallest permissible calibers and the development of the smallest powder capacity cases that will deliver the accuracy required for this specialized target purpose.

Perhaps the point that stands out most clearly in the equipment statistics is that no one or two makers of any item of equipment has any monopoly on **winning**. It is true that the products of some makers are most popular, and are used by greater numbers, winners and also-shooters as well, but they don't do all the winning.

With the difficult shooting conditions which prevailed at Tulsa, the soundness and fairness of the bench rotation system, which requires a competitor to fire from all sections of the firing line during each day's program, was again demonstrated. While bench rotation at small matches on small ranges may be neither necessary nor desirable, it is a necessary requirement for fairness in important competitions on long firing lines.

While the number of competitors was the smallest of any National Championship held to date, 68, all the NBRSA regions were represented by competitors. The tally by states was: Texas 10, Ohio 9, Okla. 8, Kansas 7, Penna. 6, Mo. 5, Wash. and New York 3 each, Calif., Mass., So. Dak., Va., Ill. and Wyo., 2 each. Ariz., Idaho, Iowa, Col. and N. Mex., 1 each. The Eastern Region, with by far the greatest area of any region and 65% of the total NBRSA membership, was represented by 24 competitors—and 13 of those 24 were in the TOP TWENTY of the championship aggregate.

Shooting conditions for this 1958 National were the most difficult for all competitors since the first National in 1954 at both the winning groups and aggregates, Custer, South Dakota, and as a result, as well as the general average, were very little better than in 1954. This points up



Part of the "TOP TWENTY" in the 1958 National Bench Rest Rifle Championship. Back row, left to right; Lyle Heap, N. Y., George Kelbly, Ohio, Ed McNally, N. Y., Joe Looper, Va., Bob Smith, the Champion, Texas, Chet Benjamin, winner of the preliminary two range 5-shot match aggregate, Pa., Harold Haynam, Ohio, Ted Holmes, runnerup to the Champ, Ill., Paul Gottschall, Ohio, L. F. Cardin, Kans., C. C. Hankins, Wyo. Front row, left to right; Don "6 m/m" Smith, Calif., Dr. A. G. Parker, Pa., Alfred Walter, Mo., George McMullen, Ohio, Bernice McMullen (her high 200 yard agg. gave her 18th spot in the preliminary ranking but minute-of-angle recheck ranked her below 20th), Ohio W. M. Brown, Ohio, Harold Shipley, N. M., and Clyde Yockey, Pa.

the fact that published measurements of groups and aggregate averages (or scores of any kind) may easily be misleading unless the conditions under which they were made are known and considered.

Among observers at the matches, not mentioned in the earlier report, were R. B. Sisk, the bullet maker from Iowa Falls, Texas, and Harold Mallet of H & M Tool Co., Farmington, Michigan.

There was no "Commercial Row" at the 1958 National. John Warren from Mass. had some of his firearms engraving displayed on a bench under the assembly shelter, and that was all. The "Commercial Rows" which were a feature attraction at nearly all large, area shoots in earlier days, seem to have pretty well petered-out, everywhere. Neither the shoot sponsors nor the manufacturers and dealers appear to presently appear to have much enthusiasm for this feature, which was a real attraction to many shooters, especially the beginners. Some members of "The Trade" have complained that they do not make enough from sales at shoots to pay for setting up a display. Perhaps they may overlook the possibility that friendly contacts made at the shoots might pay off in future business. There is also the possibility, in some instances, that a little warmer welcome and hospitality from sponsors of some of the larger shoots might aid the revival of "Commercial Row" as a feature attraction of their shoots, and thus help them remain BIG SHOTS.

P. H. T.

BENCH REST MATCH RESULTS JOHNSTOWN, NEW YORK

Statistics from the 1958 Johnstown, N. Y., Annual Labor Day Match were put out very late, were much less complete than normal for that shoot, or should be for any shoot of that size and importance, and the bulletin we received was so poorly mimeographed as to be unreadable. That is an unfortunate "let-down" following a good match, well conducted. Range operation was of its usual excellence at Johnstown and the statisti-

cal office had preliminary posting of group measurements posted promptly.

The following is what we observed on Saturday and what we can make out from the results bulletin for the two days.

Emory Tooley, a school principal and long experienced rest shooter from Dolgeville, New York, did some remarkably consistent shooting to win the five 10-shot match aggregate at 100 yards with .3902" average. His individual groups measured .440, .440, .328, .385 and .358.

Robert Hart, Nescopeck, Pa., was second with .4504; Chester Benjamin, Eldred, Pa., third with .4812; Leon Weld, Rochester, N. Y., fourth with .4924; and Robert Stinehour, Newburgh, N. Y., fifth with .4954.

M. H. "Mike" Walker, Mohawk, N. Y., barely got into the high ten at 100 yards with his .5268" average but he won the 200 yard aggregate with the only under half-minute-of-angle average (.4920) to give him a safe win of the NMC two range aggregate with .5094 m.o.a.

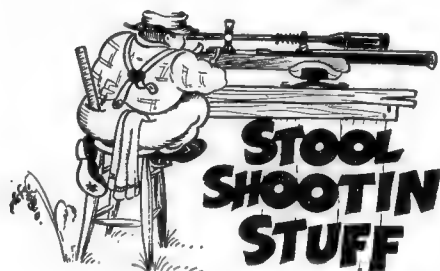
Robert Hart was runner-up in the NMC agg. with .52715; Chester Benjamin third with .56145; Ralph Felter, a first season shooter from Kelly Corners in the Catskill section of New York, fourth with .56705; and Ed McNally fifth with .56955.

STAUNTON, VIRGINIA

Twenty seven competitors arrived for our Stonewall Rifle and Pistol Club's October 4-5 State Championship and Open Bench Rest Matches.

Friday, the 3rd, was a cold, gloomy and overcast day. It even looked and felt like snow, and contrary to the weather man's predictions. Leaving town, early Saturday morning, the fog was thick enough to slice, however, about three miles from the range we ran out of it as though leaving a dark room and into

(Continued on Page Twelve)



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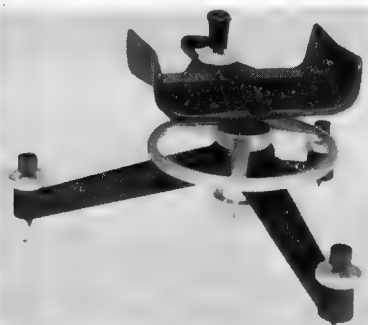
*Double Processed Throughout—22 cal. \$6.50 per C—6m/m \$7.50 per C
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Bench Rest Match Results

(Continued from Page Eleven)

a flood lit room. The sky was crystal clear and sunshine. It was quite a relief, because no one could see 200 yard targets in that stuff. It turned out to be a beautiful Autumn day and warm. Sunday was the same.

Bob Hart showed us a photo taken at the Tulsa National Matches and we noticed one thing that they used which appealed to us, so we tried it. We strung a string across the range at 75 yards, just a little lower than the target frames, with little streamers attached all across it. We also used one at 150 yards, and then three large pennants butts. We had some wind for Saturday, and we believe the streamers helped the competitors considerably. Each competitor can see the streamers out of the corner of his eye without leaving the scope.

Bob Hart had the best aggregate for the five 10 shot matches at 200 yards, .524 minute of angle. Clyde Yockey was second with .597. Clarence Aumiller came through for first in the five 10-shot matches at 100 yards with an aggregate of .464. Bob Hart was next with .515 and Bob had a National Match Course aggregate of .519 m.o.a. for first. Aumiller was next with .521.

George Morton was first in the NMC agg. for a Virginia resident, .606, and won the State Trophy. Joe Looper was a close second with .618.

We would like to pass the word along that we have completed the roof on the new clubhouse and the interior work is now going ahead rapidly. The Clubhouse will be ready for our next April matches.

Jim Perry

AUGUSTA, OHIO

Reed's Run Rifle Range held an additional and late shoot on October 25th which was conducted as a Michigan and Ohio state championship event. Attendance was somewhat smaller than expected, 15, but there was good competition with excellent shooting and all there had a good time.

Paul Gottschall, Salem, Ohio, shoot consistently well at both ranges to take second at 200 yards with .573 m.o.a., second at 100 yards with .346, to win the NMC agg. and Ohio state championship with an average of .409 m.o.a.

Clyde Yockey, Apollo, Pa., won the 200 yd. agg. with .529 m.o.a. and Harold Haynam was the 100 yard winner with a .320 average. George McMullen, Minerve, Ohio, won one match, was runner-up in three others, to make him runner-up to Gottschall in the NMC agg. with a .486 m.o.a. average.

There were only two Michigan contestants and Al Johnson was declared the Michigan champ, his NMC agg. .576 beating Ernest Scafuri's .672.

SOUTHBORO, MASSACHUSETTS

Nine competed in the final registered shoot of the season at the Southboro Gun Club, October 12th, with only four of the nine entering the cash prize pool.

Mrs. Mary Hollidge won the grand aggregate with an average of .5127 for the five 5-shot and five 10-shot matches, all at 100 yards. Crawford Hollidge was second with .6064 and host club member Albert Wile was third with .7276.

Mrs. Yvonne Dawley, West Kingston, R. I., shooting in her first match, took a second place in one match and shot very good groups throughout, and steadily improved as the day went on.

George Bodo, Moosup, Conn., shot only the 10-shot matches and won one match, took two second and one third place, shooting a J. Pfeifer barreled and built .220 Swift with the 53 gr. Sierra H. P. match bullet ahead of 33 grains 4895 and the Remington 9½ primer. His average of .678" for the five 10-shot matches was only beaten by Mrs. Hollidge's .642" and Mrs. Dawley's .666" averages.

YREKA, CALIFORNIA

The non-registered shoot at Yreka, Calif., on August 30-31, had a drag of some six weeks or more with their results bulletin, but this bulletin was quite complete in detail, very legible and well arranged. Comments from several who competed in this match have been unanimous in praise of the hospitality and progressiveness of the club and its members, and the conduct of the matches. Twenty two from California, Oregon and Washington competed in the matches.

The courses of fire were: For unrestricted bench rifles—three 5-shot and three 10-shot matches at 200 yards, the same course at 100 yards and the grand aggregate. With Varmint Rifles the course was two 5-shot and two 10-shot matches at each 100 and 200 yards for the grand aggregate.

Roy E. Norman, Seattle, Wash. won the unrestricted rifle grand aggregate with a .6817 m.o.a. average. George Hendricks, Etna, Calif., was runner-up with .6855, while Jack Bridwell, Gazelle, Calif., was third with .7435 and J. C. Rice, National City, Calif., fourth with .7756.

R. K. King, Oroville, Calif. won the 100 yard agg. with a .4880" average, shooting a .222 in Hart barrel on his own action, with his own bullets and 24½

PRECISION STAYNLESS STEEL MATCH TARGET BARRELS

Blanks in calibers .224, 6mm and .30 caliber available.

.22 rim fire blanks sold installed in customer's action only.

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grains 4320 powder. Bridwell was second with .4936 and Roy Meister, Seattle, Wash. third with .5063.

Norman won the 200 yd. agg. with .6856, Hendricks second with .7010 and Rice third with .8643.

John B. Sweany, Calistoga, Calif., designer of the numerous optical measuring and other shooting devices, won the Varmint Rifle grand aggregate with 1.2048 m.o.a. Dr. Rod Janson, Seattle, Wash., was second with 1.2562 and Joe McPhillips, San Bruno, Calif. third with 1.3341. Sweany was in second place in both the 100 and 200 yard aggregates. McPhillips won the 200 yard agg. and Dude Sattlem, Roseburg, Oregon, the 100 yard aggregate.

In this area where a majority of the shooters are just getting under way in bench rest competition (and doing all right against the minority with more experience), it was interesting to note that only six were shooting home swaged bullets, all in .22 cal. Of the other .22 cal. shooters, 8 were using Sierra bullets and 5 Speer bullets. The three shooting larger than .22 cal. all shot Sierra bullets. Norman was shooting Speer 52 gr. bullets and Hendricks was using 53 gr. Sierra bullets. Sweany, the Varmint Rifle winner, was shooting 52 gr. Speer bullets.

McPhillips was shooting a powder charge of 15 grains 2400 with 55 gr. Sierra bullets in his .222 Hart barrel on FN action. George Fullmer was shooting the same powder and charge in his .222.

The Yreka Club had their moving backer working at this shoot and they plan to conduct registered shoots in 1959.

NEW FIVE SHOT 100 YARD RECORD

Harold Zeiser of Nescopeck, Pa., shot a tiny one-hole 5-shot group at 100 yards on the first day of the Labor Day Matches at Johnstown, N. Y., which has been officially measured as .0630 inch and judged as a new record.

"Hap" Zeiser shot this record group in next to the last match on Saturday, the 100 yard shooting day. Shooting conditions were good but not perfect, with some light wind and mirage. He made his group measurement in his first two shots and kept the rest within that area.

We do not have any record of his equipment, and a request for that from Zeiser brought no response. However, we are quite sure that he was shooting a .222 in Hart barrel and we believe on a Remington action.

The extra long "bench rest" Parker-Hale cleaning rod is of just as much advantage in cleaning .22 cal. rim-fire target rifles, with their long barrels and high-comb stocks, as it is for bench rest rifles—makes it easier on the knuckles.

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PACIFIC STATES FALL SMALLBORE ROUND-UP

Total entry for this annual smallbore tournament conducted by the Los Angeles Rifle and Revolver Club, November 1 and 2, was 90, with 75 shooting metallic sights on Saturday and 69 shooting any sights on Sunday.

Robert Perkins and Joseph Specht, clubmates from Fresno, ranked first and second in the grand aggregate with scores of 3192-224 and 3192-218. Neither shooter won a match or sub-aggregate. Specht got to second place in two matches but Perkins didn't get that close in any. Perkins ranked third in the iron sight aggregate with 1593-110 and Specht was fourth with 1593-98. Perkins is ranked fourth in the any sight aggregate with 1599-114—Specht was not listed in that agg. in the bulletin but scored 1599-120. Perkins and Specht teamed to win the two-man team match with the only possible 800 score, fired at 100 yds. on the International target.

Roger C. Backstrom, a junior shooter from North Hollywood shooting in sharpshooter class, won the iron sight aggregate with 1594-110 to beat veteran Ruth Tohill's 1594-102. Backstrom did not compete in the any sight matches.

Clifford Pierson, Sun Valley, won the iron sight Dewar with 400-30 and the 50 yd. iron with 400-31, but dropped enough in the other two matches to barely get into the top-ten in the iron sight Agg. with 1591-103. Sunday, with scope sights, he dropped only one point but was beaten by a single X by Forrest O. Kline's 1599-131. Kline won the 100 yd. any with 400-30 and the 50 yd. any with 400-37. His 12 points dropped with iron sights put him down to ninth in the grand agg.

James Bell was 4th in the grand with 3190-222, Ruth Tohill 5th with 3189-213, Homer Tohill 6th with 3188-222, Alan Dapp, USMC, 7th with 3188-216, Leonard Reich 8th with 3188-214, Kline 9th with 3187-231 and Wm. E. Espersen 10th with 3187-223.

Dan Dempsey, Junior Expert from Burbank, won the 100 yard iron with 400-29, and Ruth Tohill the 50 meter iron with 400-26. Wm. Espersen won the any sight Dewar with 400-36 and Leonard Reich the 50 meter any with 400-34.

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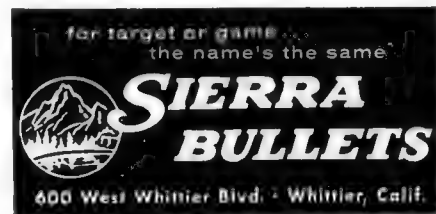
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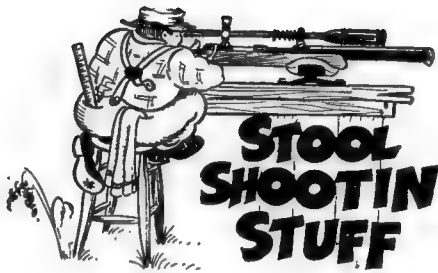
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Dear Phil:

I thought you might like to hear from me as I sit here on a rainy evening in what is known locally as a "set of sporting camps." It is further north than I have usually hunted in Maine and some forty miles above Patten which is the nearest source of supplies. It is a country of big lakes and rugged ridges from which one can look south and see snow capped Katahdin, Traveler Mountain and Chase Mountain. Most of the lakes are reached by pontoon equipped airplanes for summer fishing, and for a few days in the early part of the season, the planes take in hunters and pray the ice won't be too thick to take them out at the end of the day. In earlier days of big pine, spruce and hemlock, the rivers and streams could be followed with a canoe and the millions of feet of big logs that poured down them cleared them of beaver dams and minor obstructions. Those big log drives are things of the past but the foot paths that the hardy river drivers made are still often easily followed on both sides of the fast moving water. A four foot diameter log, sixteen or twenty feet long, backed by hundreds following it, and an eight or ten foot crescent of water from a newly opened dam, quite naturally straightened out some of the bends in the stream. There will never be the big drives again but occasionally some big sticks come out of the woods. Just a gun shot from camp they recently took out a couple of 40' lengths of spruce from trees that measured nearly 20" in diameter at the 50' level.

There are two other Cape Codders with me, snug in this log cabin with our birch logs crackling in the typical Maine camp stove, while the rain and intermittent snow do their best to make things miserable outside. Lee MacKenney built these cabins twenty odd years ago, with the thoroughness and ability that was undoubtedly learned from his father and grandfather who followed the woods or had similar camps. We drove 40 miles to town last Sunday to celebrate Lee's seventieth (70th) birthday, and by the way he hops around with a chain saw, axe, or drives a jeep, I think somebody is apt to celebrate his 100th birthday with him. Until a few more hunters come in, Lee is also acting as cook and I hardly dare go home and tell Merrie how good the food is. She makes pretty good biscuits and corn bread and perhaps might run Lee a pretty good race if she had the good old wood stove to cook on. Perhaps Lee has a little the edge on her in cooking partridge breasts, which are only more delicious when they are cooked on the trail. I picked up quite a few, clipping their heads off, although they are much scarcer this year than normally. The ice covered snows and hard crusts prevented their getting out to food and for quite a stretch the trees were ice covered so that only a few failed to starve. I managed to work my Mercury Station Wagon nearly to the camp dooryard but I've got a few extra gray hairs from trying to ride a couple of planks or flattened

logs serving as bridges across the stream. About all you can do is draw a good bead on the two planks ahead of you and hope that the tire treads match up with them. It is sort of like making a blind landing in that you don't realize how lucky you are until it is all over with.

The first day I saw a little bear a second or two too late, or perhaps I should say he saw me a second or two too soon. We were coming from opposite directions on a piece of corduroy road that still exists from nearly 100 years ago when the tote teams went to Third Lake and points beyond. I had to step off to avoid a blowdown and hardly stepped back on the corduroy when little Mr. Bear decided he had better step off to avoid a 7 m/m bullet. He was off like a greased ball of black tar that only gave me a glimpse of him as he passed through the trees and thick brush.

I went out hunting this morning but it really was wet and between the rain and the slushy snow that dropped off of the branches, I was soon convinced that the deer were smart enough to be somewhere enjoying a good laugh at a hunter who was walking along a trail that was as slippery as three eels in a bucket of Ray Beihler's bullet lubricant. By the early afternoon I was so wet that two herrings could swim out abreast by way of my boots, trouser leg, back bone and shirt collar.

Really, Phil, things are pretty enjoyable in these camps and I have often thought what a grand time we could have if we could have a gathering of some of the benchrest clan at a hunt. As a matter of fact, some fellows have shown considerable interest in the idea, and Dr. Garcelon and I talked the idea over at his house before I came in to camp. If there are boys who have a yen for such a trip, it would be nice to hear from them so that we could begin setting up plans for next year and making reservations. The country is big enough so that it would be very unlikely that our paths would cross much, even if there were quite a crowd in camp. Some fellows who are not experienced in deep woods hunting might find it advantageous to club together under the helping hand of a guide. There are lots of deer in the country, and the country is so remote that other camps and hunters are few and far between. It has often been my experience that moving hunters make the game move and the chances for a shot are better. The deer up here are large and so unused to the scent of man that they are more alarmed than those in the vicinity of farm areas. This kind of hunting appeals to the real sportsman who enjoys the pleasure of the hunt and also likes to feel that if another hunter crosses his path, he is likely to be a fellow of his own party who is not going to be wandering through the woods taking "sound" shots.

Well, my friend, this chatter is a long way from the benchrest game but my thoughts are often close to it. I received a letter from Andy Brower, Roxbury, N. Y., who is anticipating a heart operation that he hopes will make it possible for him to win more dimes from me or Merrie Stuhlschuter than he did last year. He gets a great deal of fun from his little side bets and more pleasure out of the shooting game than many. His enthusiasm has never dimmed through the nearly three score years that he has burned powder, and it is an inspiration to all of us who admire him so sincerely,

and enjoy his competition. I am sure the whole shooting fraternity will join in wishing him well with his new plastic artery which he and we hope will keep him in the shooting game.

Bill Curtis left me to winter things out on Cape Cod while he attended the Nationals and thence on to 73 Cliff Drive, Laguna Beach, California. He has a yen to meet some of the shooting clan out that way so you who are handy, get him on the telephone, and get to know one of the nicest guys I have ever met.

I am sure both of these fellows would enjoy a line or two from any of you who know how big their hearts are, and how fond they are of the shooting clan.

By the time I write to you next, I'll be able to tell you a little of the Vermont trip which I hope to take with Bob Stinehour early in November. It is a little different kind of hunting, and more on side hills where a man would be better off if he could make one leg longer than the other from time to time. We had a good time last year, and I look forward to the hunt this year. Bob can sneak through the woods about as quietly as a deer and those good eyes of his are as keen on anticipating the movement of a deer as they are in a change of wind or mirage.

There probably won't be another chance to wish the gang a Merry Christmas so let's put it on the record that Merrie Stuhlschuter, Jock and I wish you and all of our shooting pals the best of everything.

Cordially yours

Ernest Stuhlschuter

The Tournament Circuit (Continued from Page Three)

ready. Since each assistant range officer had only four shooters to watch, he got it right every time.

This Westchester range is just about as safe a place to shoot, as far as wild shots are concerned, as can be imagined. The backstop is a sheer rock cliff, all of a hundred feet high, with a bank of loose earth at the foot to absorb bullets and kill the possibility of ricochets. Another factor is the way the site seems to dampen the sound of the firing. Less than a hundred yards away the crash of twenty-four guns in rapid fire became only a gentle pattering, like a light shower on a tent.

Winning scores for this course of fire were, of course, very high. Scores of 297 took first and second spots in the Police Individual .38 cal. match. In the Auxiliary Police and Civilian .38 qualification match a 299 was the winning score. A 299 won the Police Individual .22 cal. match and first and second places went to 299 in the Auxiliary Police and Civilian .22 match. In the Auxiliary Police and Civilian four-man team match, .22 cal., the Westchester Pistol Asso. team fired 1193 X 1200—J. E. Rosenthal scoring 300, J. T. McNamara 299 and F. Rubeo and R. M. Barth posting 297 each.

Wm. E. Peterson

FIVE 2600 PISTOL SCORES

In the Autumn Handgun Tourna-

ment at Fort Benning, October 5th, Army Advanced Marksmanship Unit shooters took the top five spots with three-gun aggregates of 2600 or over. M/Sgt. Richard Stineman shot a 2634 to win, Lt. Col. William Hancock a 2628, M/Sgt. Jamse Kurtz a 2609, M/Sgt. Roy Ratliff 2603, and Cpl. Fred Grand 2600.

CONNECTICUT BIG BORE RIFLE LEAGUE

The Conn. Big Bore Rifle League finished its 1958 season October 19th with 350 shooters on 34 teams shooting on the Blue Trail Range.

Tri-Club clinched the league championship with a winning 616-67V X 625 score. Magnum took second for match and season with 609-70V. Middlefield with 605-59V and Roslyn (N. Y.) with 604-62V were third and fourth for both match and season.

Fred Willing, Roslyn, shot another 125 possible, this time with 17 V's, and H. B. Smith led his 8th place Lufbery team with a 125-7V tally. C. P. Goss and Don Bush of Tri-Club and Harold Slocum for Cheshire all fired 124 scores.

A HI-POWER RIFLE "POSSIBLE"

Earl Biesecker of Milwaukee shot a score of 210 out of a possible 210 in the Army "C" course at the Southeastern Wisconsin Hi-Power Qualification Tournament, held at the Hartland, Wisconsin, range on September 21st. The Army "C" course consists of 8 shots slow-fire in each the prone, kneeling and military standing positions, and 9 shots rapid-fire in prone and sitting, all at 200 yards with iron sights. The possible score for the course is 210, which is exactly what Biesecker shot.

Biesecker used the regular G. I. ammunition which is issued to civilian rifle clubs for the promotion of civilian marksmanship. His barrel was a Titus, on a Mauser action, with a post front sight.

Biesecker led his four-man Daniel Boone team to victory in the team competition with a total of 807, which is the highest team score over this course ever fired in the history of the Southeastern Wisconsin Rifle Association, as well as the highest individual score. In the team match in addition to Biesecker's 210 score, Ronald Schaefer scored 202, Ray Strum 189 and Henry Semrad 197. All are from Milwaukee and suburbs.

Larrie C. Radway, Sec'y

PENNA. FREE RIFLE MATCH

Once again T. Y. "Denny" Wu took all comers at the Murrysville (Pa.) Rifle Club's Fall Free Rifle Match, Oct. 4-5, as he moved the range record two points higher with his 1116-15. Using an Anschütz Free Rifle, he fired his match winning score on Sunday morning in brisk wind and temperature conditions. Barry Trew was second with 1098-17, turning in his score on Sunday afternoon. George Driesen and Paul Atkison rounded out the iron sight prize winners as they took the class B slots with 1051-11 and 1041-12 respectively.

National Champ Bob Moore won the any sight division with 1103-29, plus the prone competition with 397-19 any sights and 390-8 with iron sights. Bob got an additional \$5.00 bonus for his 397 any sight score. The club has a standing offer of \$10.00 for a 40 shot possible and offered \$5.00 for 397 or better. Ed Sum-

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mers 1095-19 was good for second place. Elmer Keene and W. Funk were the B class winners in the any sight division.

The prone competition seems to offer some additional interest, especially for those who follow the outdoor small-bore tournaments. Some prone shooters have expressed favor for the ISU rules (limited sighters and the requirement for completing a 10 shot string) and think they should be included in outdoor prone matches. The new International target has generally met with favor—a possible fired on it is a real accomplishment.

Eight of the eighteen shooters used Anschütz rifles; two used the Hammerli and one a Finnish Lion. Four used Win. 52HB rifles, at least two of them with custom free rifle stocks; two shot Rem. 37 and one a Rem. 40X rifle.

Bill Funk

BROOKLYN, NEW YORK, GALLERY MATCH

Frank Briggs, USMC, from Quantico, Va., won the grand aggregate at the Edison Rifle Club's annual gallery rifle tournament on the Metropolitan Rod & Gun Club's range in Brooklyn, N. Y., Oct. 10 through 13, with a score of 1070 X 1100. Briggs won the prone-standing any sights match with a 391, was fourth in the prone-kneeling-standing iron sight match with 288, and second in the four position any sights match with 391.

Frank Simmons' 293 with a 99 standing beat Fred Cole's 293 with 95 standing in the three position iron sights match. Lew Hazelton was third with 290 and he went on to win the four position any sights match with a 392. Simmons' standing scores (379 to 373) gave him the ranking in another tie with Cole and the runner-up spot in the grand aggregate, each having a 1068 aggregate score. Hazelton was fourth with 1065 and Robert Helgans fifth with 1060.

Dorothy Yagodowsky of the Camp Kittatinny junior rifle club team was high junior and sixth overall with her 1059 aggregate score.

St. Johns University team of F. Simmons (391), A. Luke (385), K. Navan (381) and J. Hart (376) scored 1533 to win the four position iron sight team match. The runner-up Roslyn R & R Club team of L. Hazelton, F. Willing, F. Cole and H. Heidrich were 10 points behind with 1523. Camp Kittatinny #1, in sixth place with 1500, won the Antlers Trophy and medals for high junior team.

Some 75 fired the matches in this early season tournament, featured by a very attractive merchandise prize list in the grand aggregate.

In December—a fresh viewpoint on the obsolete military arms and their relation to a possible growth of organized target shooting.

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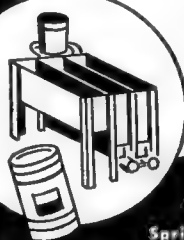
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Patrolman D. L. Cooper, fast draw artist and exhibition shooter with Texas Department of Public Safety. (Photo by Kent Bellah)

FASTEST GUN ALIVE?

By Kent Bellah

D. L. Cooper, Firearms instructor with the Texas Department of Public Safety, doesn't claim to be the "fastest gun alive." Nope, that claim is reserved for movie and TV stars who fire more blanks than the live rounds fired by gunmen of old. But Cooper is mighty good, and mighty fast on the draw. He recently won top place in a fast draw and accurate hit contest against a robot. He has given nearly 400 performances of gun skill, all free and many on his own time, for civic, school and religious groups. Over 9,000 people attended his last exhibition in Fort Worth, where it was televised. Cooper's only interest is to create a healthy citizen interest in firearms.

He has a room full of awards won in local, state, national and international competition, but his real interest is practical shooting.

To add color to his shows, he has perfected many spins and twirls. The fast draw, with accuracy, has a practical use and he has it down pat. A volunteer holds an empty cocked gun (checked twice!) at his heart with instructions to "shoot" when Cooper starts to draw. He can draw and dry fire before the man pulls the trigger! The fast draw has saved his life more than once, and Cooper doesn't consider it a "stunt." Speed has no value without accuracy, which is his aim, and his aim is good, for either hip shooting or deliberate fire. His years and splendid record in law enforcement work have proved both speed and accuracy are necessary for efficient gun handling.

His demonstrations include the usual number of stunts, such as splitting a playing card or cutting bullets on a knife blade. Then he does it with the gun upside down or backwards, aiming with a diamond ring or mirror. Then he busts a swinging target as it passes a stationary target, which requires good timing. The super fast draw with accurately placed shots amazes everyone. Some people get home before they remember he never missed a shot, and his firing was so fast there wasn't time to align the sights. He does miss occasionally, but his .357 Magnum is as familiar in his hand as a knife and fork at the table. It should be. He uses it more. That accounts for fast sight alignment by feel while he looks at the target.

Texas famous fast draw artist has
(Continued on Page Eighteen)

THE INFORMATION BENCH

The Information Bench service is available to all Precision SHOOTING readers. With your questions, send a large, stamped, self addressed return envelope for a reply. Selected questions and answers, covering as wide a variety of interests as possible, will be published in these columns. Address your questions to the following people.

Bench rest, varmint and hunting rifles, accessories, handloading, components and shooting methods—M. H. Walker, THE INFORMATION BENCH, RFD #1, Box 118, Mohawk, N. Y.

NRA and Free target rifles and shooting—Roy F. Dunlap, 2319 Ft. Lowell Rd., Tucson, Arizona.

Sporting handguns and loading—Kent Bellah, Saint Jo, Texas.

British arms and shooting—John C. J. Knott, 2226 North Euclid Ave., Tucson, Arizona.

Question: In the interest of getting more accurate combinations of the three critical dimensions of the cartridge and die combination, could I have a sketch of your new 6mm-250 case? If you have any other Wild ones that look promising, could you include those also? George Fullmer, Calif.

Answer: The only wildcats I have worked with recently are the 6mm's; the .250 Savage with the $\frac{3}{8}$ " neck and the .250 Savage case made 2.020 long with $\frac{3}{8}$ " neck. Both were originated in an attempt to produce a small capacity 6mm adequate for international shooting. The 90 grain bullets give accuracy superior to the 30-06 and 7.62 Nato and in addition are equivalent in wind bucking ability to the 30 caliber 180 grain boat-tail bullet at 2600 ft/sec muzzle velocity. M. H. Walker

Question: In this part of the country (western Kansas), we are blessed with an over-abundant supply of jack rabbits. For the Varmint rifle enthusiast, they are ideal targets and one can try them at any range that you think you are good enough to hit them. In automobile hunting, in handling a gun in and out of

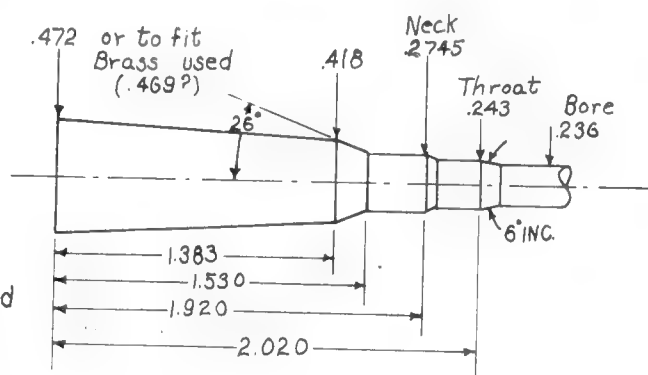
a car window, the short barrel is more desirable than the rather awkward 26" barrel of the Remington .244. I would like to cut the barrel on the .244 back to 22" or even 20" in length. Could you tell me how much loss in velocity I should expect by cutting the barrel back this short? We have been shooting an 85 grain Sierra bullet ahead of 45 grains of 4350 powder which we estimate gives us a muzzle velocity of about 3200 feet per second. George T. Chandler, Kansas.

Answer: As you probably realize, velocity loss in cutting the barrel length depends on the rate of burning of the powder. No data is available for 4350; however, with 90 grain bullets and 4064 powder, you would lose between 30 and 35 ft/sec per inch removed down to 20". 46 grains of 4350 gives the 85 grain bullet 360 ft/sec muzzle velocity according to my records. It is probable that your velocity with 45 grains of 4350 is closer to 3300 than 3200. M. H. Walker

Question: Would like to know your reaction to the Winchester Model 70 Varmint Rifle as a combination crow-gun and as a casual bench rest rifle. By the latter I mean a rifle accurate enough to give some pleasure when testing bullets and loads at the bench. As background to above, have owned a Remington .244 for about two last years with no complaints. I regard these 6mm rifles as best of all for crows. Only rifle I ever owned that beats them, and by very little, is the .25/06. My best accuracy with the .244 Rem. is with 60 grain Sierra and 44 grains of 4064. Another good combination is the same bullet and 45 grains of H380. This last powder seems to give an even greater boost in velocity. It is definitely possible to blow up a .244 with H380—very potent. T. C. Fleming, Georgia

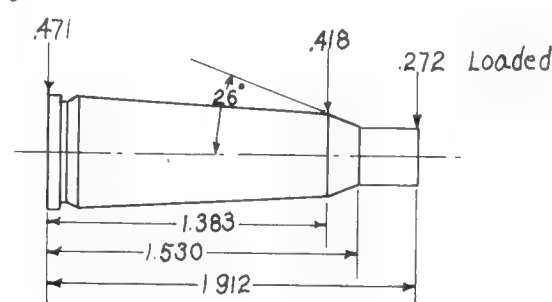
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Answer: The M70 Varmint Rifle is probably as good as any rifle available from the commercial factories when used as a varmint rifle. It will be necessary to define a casual bench rest rifle in order to draw conclusions on the value of the M70 for bench rest shooting purposes. My own definition would require the rifle to average at least $\frac{3}{8}$ minute of angle for 5-shot groups. So let's admit it; present day factory rifles can be used at the bench, but this does not make them casual bench rest rifles.

In order to secure accuracy to meet anything near $\frac{3}{8}$ minute of angle you will require the services of the very best custom rifle makers with reputations for producing accurate products, and you will get very few or none of them to guarantee accuracy. We have recommended gunsmiths in these columns before; why not contact one of them? If you are satisfied with one minute accuracy, more or less, a factory rifle will do.

If it is actually possible to blow a M/722 .244 with H380 I should know more about it. Do you mean the rifle will be inoperative or that it will shatter? It is possible to make a M/722 inoperative with overloads of many powders, but I have not heard of an actual blow where the action was shattered. M. H. Walker.

Question: Is an old model Smith & Wesson .22 with a 4" barrel suitable for a Kay-Chuk conversion? What powder is best with a short barrel? R. O. Hawkins, Okla.

Answer: If your Smith & Wesson is the old version of the K-22, and is in good condition, it can be converted to the Kay-Chuk. The 4" tube is inferior to a 6" for the world's highest velocity handgun cartridge. Remember this packs a terrific charge of 2400 rifle powder, especially with the new Sisk Revolver Bullet I designed, and I believe Unique is a better powder for the handy short tubes.

The Kay-Chuk is a precision gun that is very easy to shoot. Unless cost is a major consideration, I'd keep or sell my old gun and purchase a new K-22 to insure a perfect conversion. Lakeville Arms will sell you a new gun at list price, which saves shipping charges to Lakeville, Conn. Their work on new guns is guaranteed. Kent Bellah

Question: Is a load of 6 grains Unique with 158 grain round nose bullets too heavy for defense and small game shooting with a Smith & Wesson .38 Special M & P 4"? B. A. Sanders, Ill.

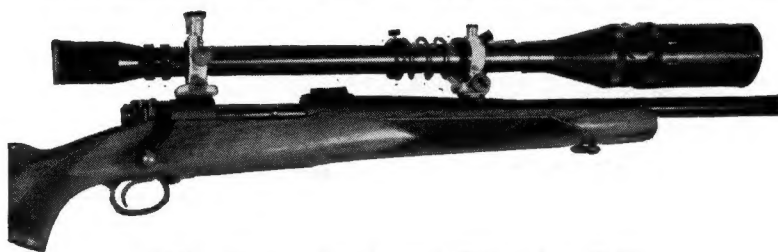
Answer: A 6 grain charge of Unique will not blow up your S & W light frame .38, if everything is right. However, it is a bit on the heavy side and you'll get tighter groups with a more pleasant shooting load of 5.2 grains. You can increase the power by using a semi-wad-cutter bullet that gives more shock than a round nose.

Shock can be further increased to about equal .357 Magnum ballistics by using a pure lead core Jugular jacketed bullet. If your sights could be adjusted I'd recommend the 127 grain Jugular with 6.7 grains Unique. As you have fixed sights you'll like the 156 grain Jugular with 5.7 grains Unique. Kent Bellah

Question: I have trouble with unburned 2400 powder with cast bullets in .357 and .44 Magnums. My object is extreme velocity. Wm. H. Janssen, Ill.

Answer: Your problem is common in big bore short tubes unless ignition is fast and complete. Use a heavy crimp,

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Top velocity with clean burning, plus a terrific increase in shocking power and fine accuracy can be obtained with the pure lead core Jugular bullets. Complete data on pressure and velocity for about 45 loads with Jugular and Prot-X-Bore bullets will be found in my article in the new 1959 GUN DIGEST, a worthwhile book for any gun fan.

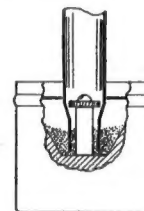
My favorite .44 Magnum load, the most deadly on earth, is a 220 grain Jugular with 26 grains 2400 for 1,750 fps, and the 170 grain H. P. with 27.2 grains for 2,000 fps. Pressure in an unvented test barrel is only 38,400 psi with either load. Muzzle energy is a whopping 1,500 F. P. but shocking power is fully twice as much as indicated because of the pure lead. Your .357 starts the 114 grain Jugular H. P. at 2,025 fps ahead of 20.2 grains 2400, with pressure 42,790 psi and M. E. 1,053 F. P.

Needless to say, these are quite destructive on varmints or game. Killing power is reduced with any hard alloy, that also increases pressure. The Lakeville Arms factory uses only pure lead in their swaged Jugulars, and the Prot-X-Bores that are nearly as effective. I highly recommend it if you swage or cast bullets at home. You'll find these a new experience in power, efficiency and accuracy, with moderate recoil. Kent Bellah.

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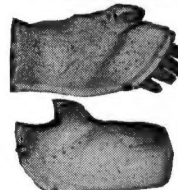
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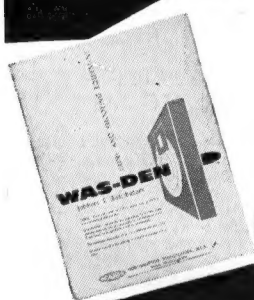
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Fastest Gun Alive

(Continued from Page Sixteen)

the honor of being four times Grand Champion at the annual Rattlesnake Rodeo near Spur, Texas. Game wardens capture more than 250 of the pizen critters, and the venom is donated to labs. The rodeo is open to all, and they come

from near and far. Shooters fire at targets for eliminations, each in his class. Champs shoot at snakes for prizes. The Grand Champ is top man. Cooper tries to be fair by firing backwards, aiming with a daimond ring, but snake heads fly when he squeezes the trigger. After a shoot all, or most all, enjoy a feast of rattlesnake. Take my word it's good eating.

Cooper is a man of extremely high moral character, devoted to his family and job first, and practical shooting second. He is 100% pro-gun and says, "Anti-gun laws affect only good citizens; yet these people help reduce crime and are no problem to the police. My pet peeve is traffic violators, with speeding and DWI first on the list. Compare the traffic toll of dead and crippled with the murder rate and you'll see why an auto is more lethal than firearms."

Cooper believes in daily practice, and gets it. He doesn't expend the time and ammo necessary to master long range handgunning beyond the 200 yards he considers a maximum practical range. For his hobby of varmint hunting he uses his favorite .357 with 114 grain Jugulars ahead of 20.2 grains 2400. His favorite rifles are a .222 and .244, and the .270 used in police work, all handloaded.

For practice and exhibition shoots he uses his SAECO furnace to cast quality wadcutters in volume enough for a custom loading business. Such a business would probably earn more than his salary, but money isn't his goal, and he keeps it on a hobby basis. His own needs are terrific. Cooper is my good friend, always ready to lend a helping hand with test shooting. His pro-gun feelings are sensible, considering that he has been shot at five times in the line of duty by hoodlums. "I've had many more than five narrow escapes by drunk or reckless drivers," he says. Cooper is a friendly, likeable person, and a good public relations man for the Department.

Starting in December—a series of articles on Precision Bullet Casting.

Letters

(Continued from Page Three)

am constantly meeting references to equipment and techniques that don't mean too much to me.

Until I read the discussions on portable precision rests by Roy E. Meister, Jim Perry and Ernie Stuhlschuter in the June '58 issue, I didn't know there were such things.

Last year I started using a conventional style pedestal rest and sand bags in the testing of .270 loads. The results were not up to expectations, probably for at least 101 reasons. However, I expect to keep trying.

There are undoubtedly a few more beginners at the bench rest game, who, like me, are not able to attend matches very often and who find it difficult to get the information they need to fill in all the gaps in their bench rest education and to bring them up to date.

Might I suggest that a series of articles covering precision portable rests and the technique of operating them, and the loading of super-accurate ammo as it is done by the experienced bench shooter, would be a great help to the beginner and might increase the NBRSA membership a bit. Also, it might refresh the memories of some of the old timers.

I sincerely hope that you will give this suggestion some thought. If you print some thoroughly detailed descriptions with enough good drawings, you cannot fail to help bench shooting.

Yours truly,

Robert J. McFeeter
Bloomfield, N. J.

(Editor's note: Mr. McFeeter's suggestions and desires are sound and sensible ones, and he is by no means alone in feeling the need for more and better information, not only for bench rest but for other types and styles of shooting as well. I have heard numerous people, interested in various styles of shooting, bewail the lack of so-called "publicity" about their various shooting games, but they always seem to expect somebody else to do the publicizing. Perhaps too many people fail to realize that the simplest and best way to make any style of shooting popular enough to grow is to make available information about it that will aid beginners to become reasonably successful in it. We have in the past tried to make it clear that Precision SHOOTING is not any "literary" or story book, but that its sole purpose is to provide a vehicle for exchange of information and news of rifle and handgun shooting that will be interesting and helpful to other shooters. Perhaps there is more misconception about bench rest shooting than any other branch of rifle shooting, and the bench rest shooters have done very little to correct that condition. If NBRSA members would quit their squabbling within their sport and more of them with the knowhow from successful participation experience would make available information to assist others to get better results, and more pleasure and satisfaction from that experience, they would be doing their branch of shooting and their organization a real service.)

New Load Experiences

(Continued from Page Nine)

the base of the bullet resist any deformation during its passage through the bore if it is to group well. It will be interesting to hear of the experiences other shooters might be having with this bullet. **30 Caliber, 150 grain, Herter Coke Bottle Bullets:** When I first saw this

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bullet I promptly brushed it off as impossible. Readers will know that it has a narrow waist similar to a Coca-Cola bottle and hence its name. I was certain that the upsetting action of the expanding gases would quickly flatten out that waist and render the shape ineffective. But nothing of the sort seems to have happened.

Again, as above, I tested 40 cartridges for accuracy. The load used was 46 grains HiVel over a Western 8½ primer. Forty rounds were similarly loaded under the standard DCM 30 caliber 152 grain bullet which I intended to use as a check. All firing was done in the same 15 pound rifle mentioned above and from the prone position. I shall not go into details on the groups made beyond the fact that both types averaged 3¾ inch 10 shot groups at 200 yards. In other words the Coke Bottle bullets were every bit as good as the DCM product. But there was one important difference in favor of the Coke Bottle bullet. Using the same load, it shot 1 inch higher than the issue bullet. That fact made me consider the results very carefully and I believe I can say without any reservation whatsoever that, all other things being equal, the Coke Bottle bullet produces higher velocities and lower pressures than any other 150 grain bullet of standard shape. For hunting and general moderate range target practice that bullet should prove very serviceable. When seating it in the case, it is necessary to seat it somewhat deeper than the straight sided bullet.

Again, it will be interesting to hear of the experiences other shooters may have had with this bullet, particularly when hotter loads producing higher pressures are used. The questions that remain in my mind are: Will a real hot load straighten out the waist of that bullet? Will the upsetting action of the powder gases push the base forward so as to change the waist shape in varying degrees from shot to shot? If it does not we had better start thinking about redesigning our present standard bullet shapes.

A tip from Al Freeland. If you use the Parker-Hale cleaning rod, roll a Hoppe's round .30 cal. (No. 3) patch around that long jag-tip for cleaning .22 cal. rifles, either rim-fire or center-fire—it does the best cleaning job on anything we've tried. And if you clean from the breech, do not let the patch fully emerge from the muzzle and you can't harm that critical area.

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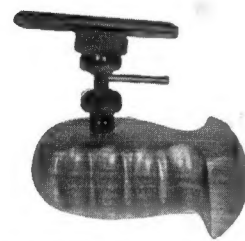
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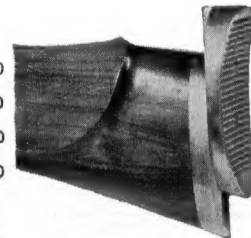
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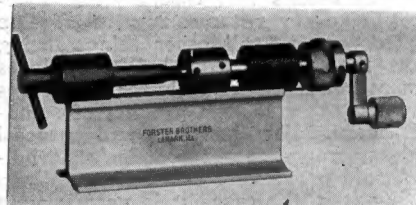
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